

Online Focus

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FINE ART FOUNDATION

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TEFAF ART MARKET REPORT ONLINE FOCUS

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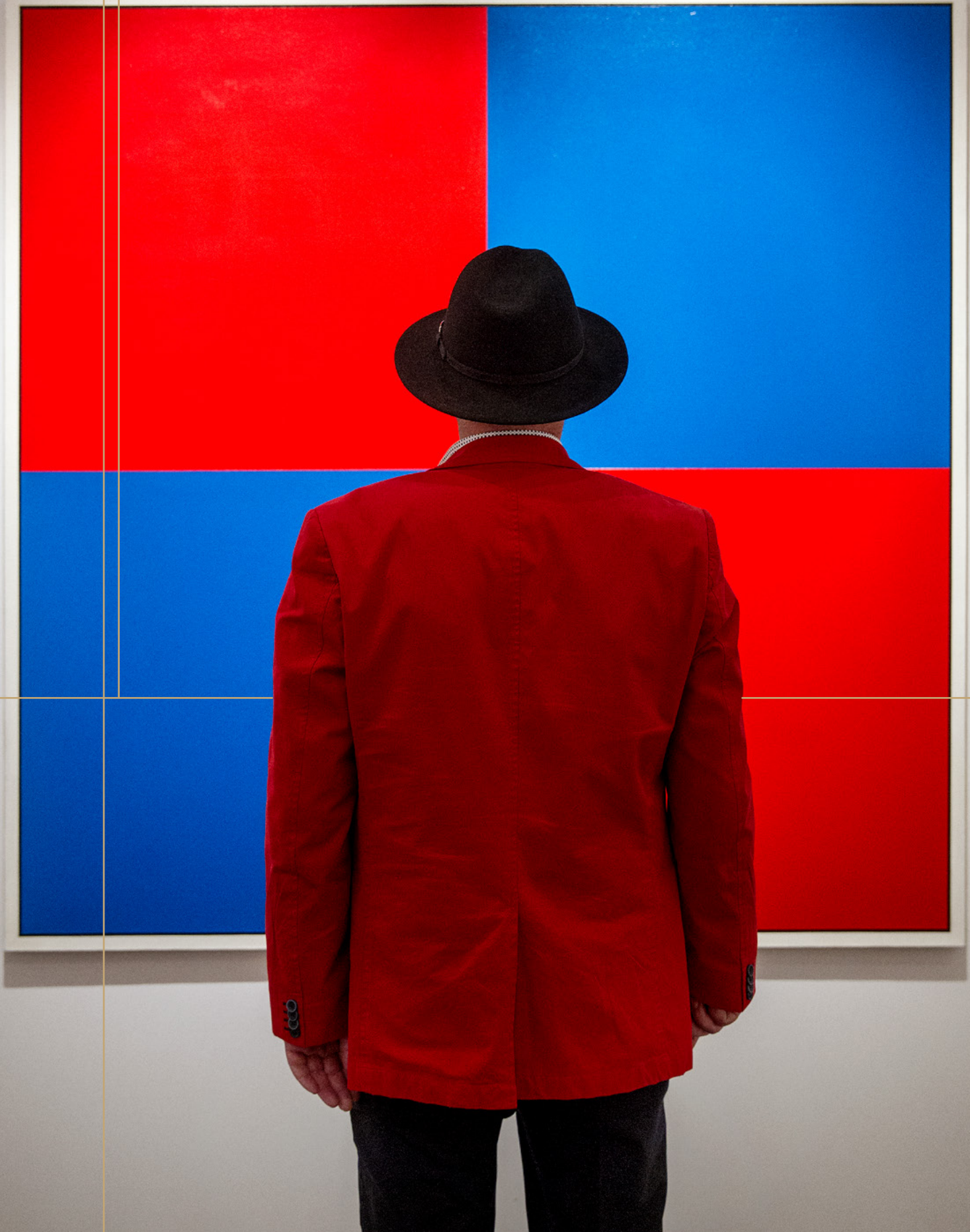
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FOREWORD

TEFAF

Since 2002 TEFAF has been involved with providing a program of independent research into the art market. In addition to the TEFAF Art Market Report released during TEFAF Maastricht, this year's special focus provides insight into structural developments across the art e-commerce industry.

In conjunction with our expansion to the USA in 2016, we have expanded the scope and provision of high quality, reputable information through our partnership with Maastricht University, artnet and Invaluable.

The sheer volume of data on global art and antique sales has risen dramatically over recent decades. The speed with which this information transcends global art markets is phenomenal as the digital age has revolutionized the way information is transmitted and accessed globally. Yet, deciphering information for high quality and rare goods requires expertise, and reputation and quality remain fundamental to the foundations of the art trade.

Art fairs are playing an increasingly important role underlying the success of e-commerce in the art industry. The social context that art fairs provide helps to create and maintain the trust, particularly important for valuable, higher quality items that is required for the online market to flourish. The presence of experts, maintaining and developing personal relationships and ensuring quality through vetting, remain vital elements that art fairs offer to build trust. In combination with transparent information from digital platforms, e-commerce is providing an additional platform for artists, galleries, dealers and auction houses to reach collectors and new buyers.

In this report we take a look at how e-commerce is reshaping the art industry and what opportunities lie within.

Patrick van Maris
TEFAF Chief Executive Officer



ACKNOWLEDGEMENTS

The TEFAF Art Market Report in 2017 and this additional TEFAF Art Market Report: Online Focus, is written in partnership with the Maastricht Centre of Arts and Culture, Conservation and Heritage (MACCH) at Maastricht University. Both reports been prepared by Professor Rachel A. J. Pownall, who holds the TEFAF Chair in Art Markets at the School of Business Economics at Maastricht University. She also holds the Van Gogh Chair in Art Finance and Museum Management at TIAS School for Business and Society.

This year we are proud to announce our partnership with Invaluable who have provided e-commerce data to complement data on online auction sales. I am extremely grateful to CEO Rob Weisberg, for his dedication and help in providing online auction sales data, and for enabling us to categorise and provide a detailed breakdown of their global data across a number of art categories.

I extend my thanks to TEFAF for providing their view in the introduction, written by Mr. Michael Plummer, Principal, Artvest Partners. I am also grateful to artnet for providing auction house data for online platforms. I would like to thank Kristie Pladson for help with the infographics, and to Anouk Duivenvoorden and Linda Rodrigues-Neves for help with the survey and additional data collection.

I am particularly grateful to Dr. Anna Dempster, from the Royal Academy who provided advice and continual support. The report forms an integral role in positioning TEFAF with Maastricht University and the Royal Academy, providing a platform for joint academic and educational initiatives.

Prof. Dr. Rachel A.J. Pownall
TEFAF Chair in Art Markets



THE ONLINE ART BUSINESS

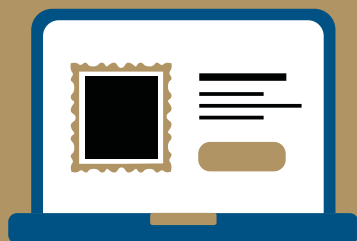
In this special focus report, we take a look at how e-commerce is irrevocably changing the traditional global art market and examine how vital market players are confronting the opportunities and challenges this upheaval presents. We also provide some insight into the trends ahead.

There is no doubt of the sheer potential of digital and mobile channels to impact art business. At a time when the global art market slowed, online sales channels are showing very high rates of growth for innovative business models. Those sales, for now, represent a small portion of the overall international art market in terms of value but myriad signs point to an ever-increasing share in terms of volume in the years ahead.

Consider that serious collectors, using multiple devices, can turn to technology today to build their collections, obtain provenance and valuable information, finance and insure their newly-acquired piece, digitally fingerprint it and actively manage their collection. The next generation of potential collectors, so critical to ensuring a vibrant art market, has even greater comfort with technology that allows them to browse art from any seller in the world from any device, whenever they want to, from wherever they are. They are a generation that has come of age buying online; it is second nature to them. Data presented below shows that 57% of Americans aged 25-34, a clear majority, are comfortable buying art online.

To begin this examination of the online art market, it is helpful to put online sales in context. At present, approximately 8% of art auction sales took place online. For art dealers, 4% of their global sales of \$26 billion occurred online. Although the market for online sales is relatively small for art, antiques and collectibles, the online revenue growth stated by dealers for a Maastricht University global dealer survey is very healthy, at nearly 19%.

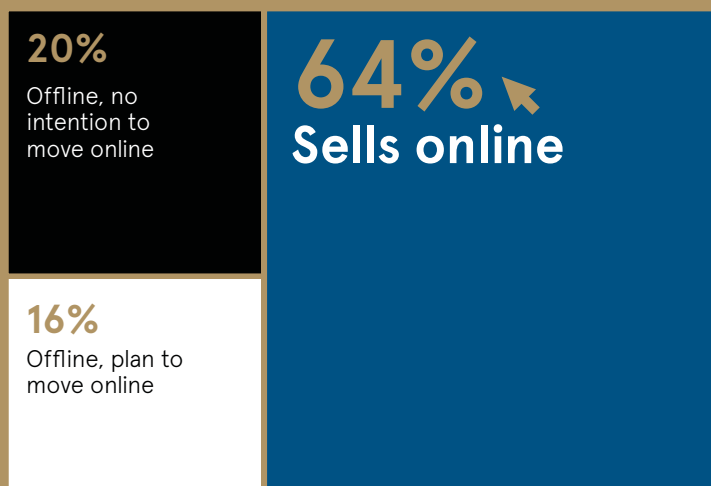
World Art & E-Commerce Highlights in 2017



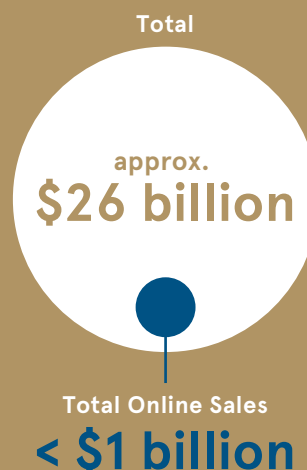
E-commerce is expanding the outreach to global buyers and providing unprecedented exposure for emerging artists

Dealers are more motivated to reach a wider audience with marketing and advertising than to directly generate revenue online

Art & Antique Dealers in 2016

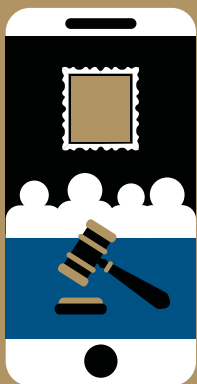


Dealer Sales Market



Low-price purchases are taking off online, but trust and transparency issues limit growth in the upper end of the online market

Anti-trust and regulatory frameworks could help foster growth for this market as will a younger buyers demographic more "au fait" with e-commerce. More and more of the art world is interested in blockchain technology, a database of digital transactions that will help establish artwork authenticity and combat fraud and offshore dealings.



8% of total art auction sales were sold through online sales branches

Selected Traditional and Online Auction Houses:

Share of Total Sales from E-commerce (Live Online Auction and Online Sales)



Bidding online during a live sale remains more popular than online only sales

The size of the art market depends on the definition and price range of artworks



The value of art, antiques & collectibles sold through dealers, auction houses & marketplaces is at least \$3.1 billion

\$1 billion

Dealers selling Art & Antiques

\$1.5 billion

Auction houses selling art & antiques + collectibles

\$0.5 - 2 billion

E-commerce on marketplaces for art & antiques + collectibles

E-commerce platforms come in a wide variety of business models

ex: facilitate sales, provide listings, etc.

The market offers:

High risk



High competition



High reward



for innovative business models that provide valuable intangible assets: trust, transparency, networks, branding, knowledge, expertise, and website design

WORLD ART & E-COMMERCE HIGHLIGHTS IN 2017

8 KEY TAKEAWAYS

1. Auction houses that have actively embraced online engagement, such as Christie's, Sotheby's and Heritage Auctions, have gained advantage.
2. The dealer community is behind in its efforts to adapt to this new technology. A third still operate offline only and among the other two-thirds, just \$1 billion of the \$26 billion made last year was through online sales.
3. E-commerce is helping auction houses, dealers and artists expand beyond the traditional marketplace to reach new buyers and collectors; this will continue and likely accelerate.
4. Online art purchases are growing fast for lower price points, which is expanding the art market by enticing new buyers and introducing a greater number of emerging artists.
5. Issues of trust and transparency are limiting growth at the upper end of the market but advances in technology may change this.
6. Younger collectors are digitally savvy and the market in general should benefit at all price points from their involvement in years to come.
7. Beyond a means of marketing sales itself, online is an increasingly crucial way of promoting and raising awareness of one's art through social media.
8. No dominant, single player has developed. There is a shake-out underway among online selling platforms: those doing well are those that are innovating, such as Invaluable, 1stdibs and Artsy, while other business models have struggled or failed.



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INTRODUCTION

THE DIGITAL ART WORLD: PAST, PRESENT, AND FUTURE

MICHAEL PLUMMER, ARTVEST PARTNERS

Has Steve Jobs Changed the Art Market?

There is an axiom in the technology industry that during the first five years a disruptive innovation has less impact than you expect and that after ten years it has far more than ever imagined. The timing of this TEFAF Art Market Report: Online Focus report and its findings, by Professor Dr. Rachel Pownall, is being released ten years to the day since the first iPhone was introduced in June 2007. If we reflect for a moment on what life was like before this little slab, or one of its competitors, established its ubiquitous presence in our hands, the art world was a considerably different place. In the most fundamental ways, this omnipresent mobile technology has radically transformed nearly every level of our interaction with artists, museums, art fairs, dealers, auction houses, arts education, the media, and even with art itself. Some have argued that it has influenced the nature of what is considered art.

Disruption

In the last two decades, we have witnessed the enormous and transformative impact of technology on how business is transacted in every business sector, except some might say, the art industry. The economics of the entertainment, travel, retail, media and publishing, commercial real estate, local transportation and food industries have all been radically altered. Amazon alone is estimated to account for a large proportion of 2016 US retail sales. Walking along the streets of New York city, we see the transformation of the commercial streetscape, since the only businesses that can now afford to pay street-level rents are those that are high touch: luxury goods, restaurants, specialty food and drink, and direct personal services. A similar transformation is also taking place in suburban shopping malls. How, when, and in what manner will this transformation take place in the art industry? Is it happening now and we are not fully aware of it, just as the five-year/ten-year axiom suggests? Or is the art market impervious to the penetration of e-commerce conversion at its higher reaches?

Defining the Digital Marketplace in the Art Industry

Traditionally the digital space in the art market has been defined by online selling platforms. What is actually taking place is the formation of a digital communication envelope that is increasingly surrounding art buyers, prospective art buyers and general art enthusiasts. It takes the form of images on Instagram and Facebook, through art Apps, QR Codes on exhibition walls, education/entertainment video content on YouTube or Apple TV, price and sourcing research on artnet or Invaluable, general web searches on Google, email exchanges between gallery or auction house staff and ends

finally in a purchase that may or may not consummate in a standard online transaction, but rather through a simple text message to the seller. It is colorfully described by McKinsey & Company in a study of the closely related Online Luxury Market: “the answer lies in understanding the complex and lengthy journeys that today’s screen-staring, button-clicking luxury consumers embark upon when considering and making purchases.”

Dealers who frequently exhibit at fairs now describe a phenomenon where prospective buyers will walk into the booth, take photographs of a work of art and its label with their mobile device, and walk out without saying a word. Occasionally that visitor may return to discuss the piece, but will have first conducted their research on a particular artist and similar works of art online. Those who continue to insist that serious art sales can only take place in person, just because the direct transactional selling impact of the digital envelope is so difficult to measure, do so at the risk of not reaching clients who expect to be fully engaged and serviced through this “digital envelope”. That segment of the population is expected to grow.

Increasingly, a dealer, auction house or art fair, can no longer rely exclusively on an advertising and press campaign, but must now have a fully engaged social media team keeping its presence alive – and content fresh – on Instagram, Facebook, online selling platforms, blogs, and general art media. While these new communication channels bring the benefit of potential new clients, they also significantly increase the cost of doing business, both directly as a new marketing line item, and indirectly as an incremental drain on intellectual capital in what are often cerebrally intensive, small businesses. In short, for a sizeable part of the dealer community it is challenging to source and sell property while at the same time keeping the company’s Instagram feed and online inventory current, let alone develop a digital strategy customized for their clientele.

Defining What Constitutes the Online Fine Art Market and Antiques Market

This is a matter of significant debate and one for which there is no clear bright line. Are coins, prints, posters, wine and collectibles, often reported as a component by some of the major auction houses as part of their online sales numbers, considered to be part of this market or not? Is furniture? If so, where does one draw the line between a second-hand reseller and an antique dealer? Is it by value? If by value, does one make an arbitrary assumption of excluding objects below \$500, \$1,000, or \$5,000? In the following pages Professor Dr. Rachel Pownall has made a good faith effort to address these questions with a well-reasoned set of assumptions, but they remain unresolved within the art industry itself, a marketplace where analysis is as much of an art as a science given that over 60% of its annual turnover volume goes unreported. It is a worthy debate and TEFAF expects to expand the dialogue over the next several years to help the industry develop more common ground on the matter.

Related Business Trends

Anyone who has travelled recently to London's Mayfair, the center of the London Art Trade for centuries, will notice a change – a decreasing number of art galleries.

A combination of rising real estate values, the ascendancy of art fairs, online options, and changing collector behavior, have forced many dealers out of street-level venues and from the neighborhood entirely or to “by appointment only” spaces above stairs. It is worth noting that the increase in rents is in part driven by the growing presence of luxury brands who, in addition to increasing their digital activity, see a physical need for a physical location as a critical component of their strategy, a location where their clients can experience the tangible attributes of their product up close and in person.

Art fairs have become essential to gallery and dealer sales, some estimates have them as high as 41% across the industry and increasingly skewing more towards international fairs than domestic ones. When a gallery adds in shipping costs, travel and lodging for staff, the entertainment costs for important clients and potential clients, the competition for dollars spent on competing sales channels – commercial spaces and online – raises the stakes for them to perform consistently and meaningfully. This dynamic is very much at odds with the patience and investment required to develop an established and trusted e-commerce site.

Concurrently, collecting tastes have shifted more towards Modern and Contemporary Art and Design and much work remains for the market to engage younger, new collectors with wider sectors of the art market.

Lastly, these are more than unusually uncertain times geopolitically, having a dampening effect on the art market, and forcing dealers and auction houses to further up their competitive game to keep business flowing. That burden lands heavily on art fairs too, which need to continue to innovate to remain leaders in their respective categories in a highly dynamic environment.

Comparisons between the Digital Luxury and Art Markets

A 2015 McKinsey survey of the digital luxury landscape states that of the Ultra High Net Worth Clients that have the means to buy art and luxury items, “a large majority ... (75 percent) juggle multiple mobile devices, whereas only 33 percent of Americans own more than one.” And that “more than most, luxury shoppers want a seamless, digitally enabled, multi-channel experience.” It is our sense that this expectation applies to art buyers as well, and galleries, auction houses, art fairs and dealers are struggling to catch up. Many dealers are uncertain how to approach the challenge and where to look for guidance. Lastly, there are others who do not yet fully appreciate how important it is to engage with their future clients digitally, and either as a matter of holding on to more traditional business practices, or being intimidated by technology, simply refuse to do so.

Sotheby's, Amazon, and eBay – The First Wave

In January, 1999 Sotheby's announced a \$25 million plan to create a dedicated online marketplace, the first of its kind from a major auction house. Sotheby's online venture remained the boldest and most conspicuous participant in art market e-commerce until it was shut down in 2003. At the heart of its initial strategy was a plan to sign up 5,000 secondary market dealers, nearly all of them clients, to provide the inventory to sell on a dedicated Sotheby's e-commerce site, separate from its live auction business. Given the novelty of e-commerce to the art market at the time, Sotheby's had to pull out all the stops to persuade its Trade clients to participate. Skeptical of success, the Trade responded by providing some of its least fresh, most overpriced inventory, and after the site launched, justified the lack of sales as a reason not to add fresh inventory. It was the quite opposite of a virtuous cycle. Many believe that Sotheby's was either too early in the online market or that it had the wrong strategy from the outset by not integrating the online marketplace into its live auction platform.

There were other less conspicuous online ventures in the first wave of art tech startups, and many of them shutdown within three years of the NASDAQ crash in March of 2000, when all venture capital funding froze up: [appraisal.com](#); [circeline.com](#); and eBay Great Collections among others. Several survived those capital-lean years such as [1stdibs](#), [icollector](#) and [artnet](#), as well as [Artifact](#) a pricing database that evolved into an online service provider to the auction industry and in 2013 changed its name to [Invaluable](#).

Auctionata and Consolidation – The Second Wave

Online aggregator, [The Saleroom.com](#) was launched in 2008 by ATG Media just after the collapse of Lehman Brothers, by the then owner of the [Antiques Trade Gazette](#), the London based trade publication. The ATG had an established reputation in the market and understood the value it could bring to smaller auction houses by offering live bidding online. Business grew exponentially, helping to set the scene for the second wave of online businesses in the UK and Europe. Other new online businesses were being talked about and shaped from around 2010. [Artspace](#) and [Paddle8](#), both New York based enterprises with a focus on contemporary art were launched in 2011, whereas Berlin-based [Auctionata](#) launched in 2012. [Christie's](#), acknowledged as one of the most established art businesses in the world, also launched its own online enterprise with a small series of online only sales in 2012, and had been quietly integrating online bidding into their live auction platform for several years prior to this. Last year, [Christie's](#) online platform offered 118 sales over 19 categories and saw sales increase by 109%.

The sluggish art market in 2016, however, had significant repercussions for some online art businesses. [Auctionata](#) was liquidated, despite raising \$88 million. Having merged with [Auctionata](#) less than a year before the latter's bankruptcy, [Paddle8](#) was sold for only \$6 million after raising \$44 million (\$34 million coming from a C-round as recently as October 2015). [Artspace](#) reduced its staff from 28 to four, including the departure of its CEO. [Lofty](#) was acquired by [Auction Mobility](#) for an estimated \$500,000 after raising seven million in 2012.

A significant component of most failures is a “build-it-and-they-will-come” strategy that in both the first and second waves of art tech start-ups has proved to be a high-risk strategy in the art industry. It is extremely difficult to build a new, trusted brand name in the high-end sector of the art market without access to a trusted and targeted database of collectors. On top of which, the traditional brand building practices of Silicon Valley venture capital have worked much less effectively here than elsewhere as they have been difficult to scale. Many of these firms underestimated, in the second or third year of a new enterprise, the increasingly inverse relationship between investors’ patience and the path to break-even, or at least material revenue generation. In a marketplace that is allergic to PowerPoint presentations and business jargon, where anecdote, intuition, and past practice tend to hold sway, the online strategies of other industry sectors did not always compute with art market sellers, dealers and collectors.

Two art-tech companies that stand out for having provided essential services to the art industry from the start are artnet and Invaluable. artnet’s pricing database, (they also provide gallery advertising and online auctions) has been critical to the daily business of art professionals and collectors for decades. artnet has been a primary source for the TEFAF Art Market Report since its first release in 2002.

Invaluable is an online marketplace of more than 5,000 auction house and dealers, with 3 million unique visitors a month. Invaluable also provides auction technology to several hundred auction houses globally – including Sotheby’s, where it is the core technology partner for online bidding – as well as for dealers through the Buy Now technology. This spring, Sotheby’s and Invaluable announced a multi-year extension of their partnership. Sotheby’s, which joined the Invaluable marketplace in 2016, offered 112 auctions on Invaluable that year, including timed online-only offerings. This year, that number is expected to climb above 150. In the 112 sales, 90% of bidders coming through Invaluable were new to Sotheby’s. Invaluable bidders in those sales represented 36% of online bidders and 19% of online buyers.

While auction sales fell in 2016 by 18.75%, both Sotheby’s and Christie’s reported significant increases in online sales. Christie’s online-only sales have reached \$217m, and Sotheby’s online sales increased 20% over the previous year to \$155. Invaluable realized a 30% increase in online live auction revenue year-on-year.

Real Challenges Need to be Addressed

Authenticity. A recurring theme of most e-commerce research is that surrounding the risk of buying a fake. As a buyer moves up the value chain, it is obviously an increasingly larger financial risk. But there are numerous ways to potentially counter this such as building brand trust through online longevity and familiarity, providing authenticity guarantees, providing a type of authenticity guarantee through an insurance partner, providing more transparency around comparable pricing, more educational content or possibly creating a type of vetting process like that used at top-tier fairs.

Condition. Closely related to authenticity are concerns about condition and both are usually embedded in research under the question of the buyer being able to physically examine a work of art. But as industry experts know, the physical examination of a piece can belie problems that are undiscoverable to the untrained eye. Here again a type of vetting process or some type of standardized condition report process, most likely backed by technological analysis, would significantly mitigate the trust issue. The jewelry industry already has had in place for decades a grading system for rare gems. It is an essential component of any high value jewelry transaction off or online.

Fulfillment. Not only does this pertain to ensuring that an object or work of art arrives undamaged and in the condition in which it was represented at the time of sale, it also concerns a client's expectations about branded, attractive packaging. If it is the brand that is conveying the trust of authenticity and quality of condition, it is an important opportunity to have the brand strongly presented at the time of delivery to reinforce and validate the purchaser's decision. Given the standards set by Amazon, it also pertains to speed – probably the biggest weak spot in the art industry for any type of transaction.

Transparency and Consistent Rules of Engagement. This demand for greater transparency is widespread across the industry for offline transactions as well. In 2016, \$27.9 billion worth of art world transactions took place privately and went unreported. There is a growing consensus that some type of standardized record keeping needs to be put in place. Online auction services that are breaking with public auction precedent and not reporting sales results, are making a mistake regarding changing marketplace expectations. Audiences that are comfortable with buying luxury good online are also accustomed to levels of transparency that the art market needs to understand and embrace. New companies such as Artory which are developing secure databases to register and confirm transaction histories are one potential solution to this long-standing challenge.

Overexposure and Control. A concern expressed by many dealers is management over where and when an image of a work of art is shared and its destiny once it has been. Selling art can take time. A single work of art may pass through several dealers' hands before it finally reaches its final buyer. If the work is still on a website as the inventory of dealer A when it is now being sold by dealer B, it can create confusion at best, and in certain circumstances sow doubts in a potential buyer's mind. Unlike an auction house which needs to maximize an artwork's exposure before the impending deadline of a falling auction hammer, dealers often manage their sales limiting the exposure of a work of art and strategizing over its unveiling. The introduction of a technology that could limit reproduction of images and give them a built-in expiration date, say for example a type of Snapchat technology for the art images, could help address this issue.

It is important to note that all these issues are challenges, not insurmountable obstacles. The entities, and partnerships, who get this right and address these matters

with real innovation, will remove a lot of transactional friction in the art industry with far-reaching benefits for all concerned. They will also be the big winners in a significantly disrupted and transformed art industry.

Millennials: The Next Generation of Art Collectors

Having come of age during this massive intrusion of mobile technology into the human landscape, millennials have shown themselves to be not only more engaged in it than their older counterparts, but also more trusting and dependent on it for daily activity, social status, interaction and life experience.

In a survey conducted in 2016, nearly half of young millennials (18 – 24) and 33.8% of older millennials (25 – 34) indicated that they prefer to discover new art through social media. When it comes to purchasing art online, 51.6% of older millennials responded that they would buy art online. Nearly one in four of young millennials indicated that they would prefer to purchase art online rather than in person. Interestingly, and perhaps it is a feature of having lived through the financial crisis of 2008, 37.2% of older millennials believe that art is a good investment.

Is There a Permanent Ceiling on the Value of Online Transactions?

Skeptics of e-commerce in the art market argue that works of art valued over some magical threshold, say fifty or one hundred thousand, will never gain critical mass. We agree that the challenges outlined above contribute to that perception as well as the concerns expressed in studies of current collectors and online art buyers that they prefer when possible to view an art purchases in person. However, we believe there are two important factors that are not considered when also projecting future online transaction growth. The first are service innovations that are likely to be introduced by businesses and strategic alliances that could counter these impediments to high value transactions.

The second factor is significant behavioral changes we expect in how the next generation of art collectors, i.e. millennials, will choose to engage with and buy their art. And the millennials who only have modest buying power today are the very same population from which the next wave of serious art collectors, a generation only second in size to the Baby Boomers, will emerge when they reach the prime earning and art collecting years between 45 and 65.

Bricks and Clicks

A principal advantage that a dealer has in the emerging digital art world is its physical presence in key urban centers and art fairs. Even Amazon, with its clear dominance of online retail, is opening physical retail locations in select cities around the US throughout 2017. If, or when, a gallery's fair and inventory offerings are fully integrated into easily accessible and searchable databases, how much easier would it be for a

potential art buyer to arrange to see a work of interest at an art fair near them or find a gallery close enough that has exactly the right piece.

Outlook

While it is difficult to measure accurately the penetration of technology in the art industry, all art businesses are at some risk if they use this as an excuse for not engaging with it, rather than setting a strong foundation for a possible tipping point if and when it occurs.

Among leading members of the art trade there is conflicted thinking: dealers express the need to engage with new, younger clients, to keep their art expertise relevant, and to be more competitive with the large auction houses. Yet, as a sector of the industry, the art trade is falling behind auction houses in embracing digital engagement and transparency and thus the potential for e-commerce transactions.

Especially dealers trading in historical art, who have been the slowest of all to embrace technology, must find ways to do so digitally if they want to attract younger buyers. Just as importantly, what has emerged as one of the greatest drivers of digital information is video content – narrative, history and story-telling, and this is a skill where dealers have one of their greatest strengths.

As a trusted leader and innovator in the art industry, TEFAF is well positioned to find new ways to assist its art community through this important transition. This TEFAF Art Market Report: Online Focus is a step in that direction.



ART & E-COMMERCE

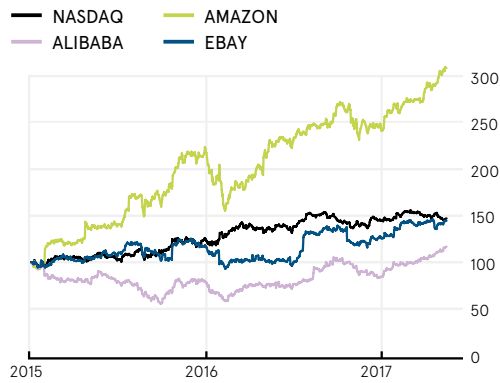
As highlighted in the introduction, the world has experienced an enormous shift to online retailing. Those retailers who have successfully embraced the move to meet the demand from technological advances are thriving. Effective application of that very technology has empowered the mainstream consumer and the collector in the art world. Traditionally supply has shaped the demand for goods and services, and advisors at auction houses and dealers, through their expertise, have been very successful in supplying objects to meet demand.

The ease and access of browsing the internet has shifted the local activity of buying art and antiques to make it a global activity. Collectors are no longer bound by a limited selection of local dealers and auction sales. As artists, dealers, galleries and auction houses all promote their artworks online the choice for collectors has broadened dramatically. This has been further enhanced by the emergence of social media where individuals are empowered through access to information and a huge choice of artworks and objects.

Similar to the high-end luxury goods market, many galleries, dealers and auction houses remain the gatekeepers governing supply. The importance of reputation, branding, and expert advice remain crucial in providing objects of desire. Taste makers help collectors make choices. In the art market, those who are able to embrace the shift to a demand driven online world, whilst maintaining the features of gatekeeping are experiencing growth by harnessing the value from innovating and creating additional demand. Currently this is for lower price points where technology is innovating value, for platforms that offer a variety of services to meet the mainstream demand for artworks for the home. This is also happening for art fairs, who are increasingly presenting emerging artists and providing a forum to meet this growing demand.

The figures below highlight the extensive growth in e-commerce for retail sales. As a benchmark for the technology sector we see how technology stocks have shown solid growth over 2016 and the first half of 2017, having risen by 50% over the past two and a half years. A number of leading online e-commerce marketplaces have enabled an efficient means to connect buyers to sellers through the internet. For example, eBay is a global marketplace and has experienced similar growth to the NASDAQ, whilst Amazon, the largest online retailer in the world, has experienced phenomenal growth over the same period, with its share price tripling.

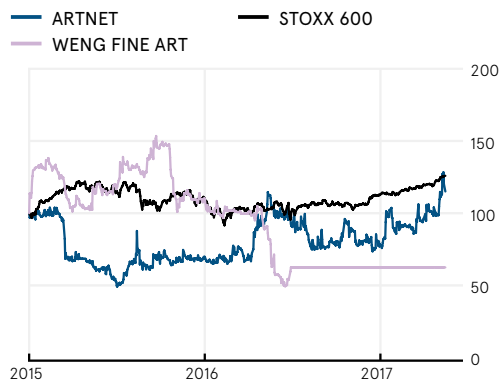
MAJOR E-COMMERCE STOCK PRICE INDICES



Maastricht University Graphic | Source: Datastream

Other marketplaces for e-commerce have grown enormously over the past few years. Take a look at the sales of the Alibaba group, almost keeping pace with eBay and the NASDAQ index despite the disadvantage of a strengthening dollar.

EUROPEAN ART BUSINESS STOCK PRICE INDICES

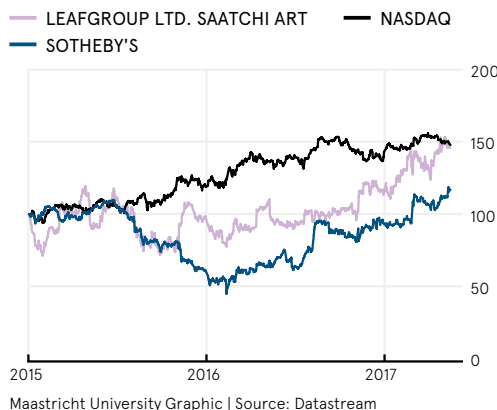


Maastricht University Graphic | Source: Datastream

For traded share price data in the art market, this report is limited to the number of art businesses that are listed companies. In the figure above, we observe that 2015 saw a deep decline in both Leaf Group Ltd and Sotheby's share prices, with Sotheby's losing 50% of its market capitalization. During 2016 the NASDAQ Composite index representing Technology stocks increased by 6.2%. The return to Sotheby's share price during 2016 was 46.85% with a jump in earnings despite falling revenue and the recorded drop in auction sales (27% for the company as a whole, and 29% for art and antiques). The drop in revenue was less than expected, and with fourth quarter sales in 2016 and spring sales in 2017 higher, the share price has bounced back above the level in 2015. 2015 did not fare well for art business stock prices, relative to technology, but there has been a turnaround since 2016, and 2017 is providing strong growth. Relatively, since 2017 the NASDAQ has risen by less, with an increase during the first quarter of 1.16%.

Sotheby's has experienced even higher returns with the share price increasing by 1.75% over the first quarter, announcing higher than expected earnings during March 2017, and by May 2017 the share price jumped by 15% on the start of the year.

DAILY ART BUSINESS STOCK PRICE INDICES



Some people in the art market anticipate a major disruptor, similar to Amazon, which could dominate online art sales. However, a number of key questions remain before it is clear whether a dominant firm might emerge: Are there any firms in the art e-commerce space which can rival the speed of growth of Amazon? Why are some auction platforms succeeding while others are failing? What will be the next e-commerce platform to fail and why? How is the art market reacting to the advance in technology and social media?

The internet has revolutionized the amount of information available on art prices. Anyone can now find detailed information on the sales locations, prices, and provenance of individual artworks and antiques, and many collectibles. This increased access to information has enabled price transparency in the market. Information is crucial when buying and selling art and antiques. Not only is digesting and understanding this information fundamental to the well-functioning of art markets, but to ascertain the quality of information. This is particularly apparent for art and antiques with high price points.

“WITH GREATER TRANSPARENCY COMES THE ISSUE OF WHICH INFORMATION SOURCES TO TRUST”

Traditionally information and expertise has been transmitted through specialists in both auction houses and with dealers and galleries. The social context and inter-personal networks play a very important role. Personal relationships form the basis of trust. Collectors and new buyers are empowered through gaining access to more transparent information which is often provided online.

Buying an object online with a low price point can be fairly straightforward in terms of checking for quality and finding previous prices. Rarer items, require more expertise when gauging prices. Concerns about quality, and the associated depth of information surrounding the provenance, becomes highly important in determining whether an item will sell online.

There may be an asymmetry of information, with one party having more information on the true quality of the object. The owner often will have more information or knowledge on aspects of quality. Whereas the buyer may have an informational advantage as to the true value of a particular artist at the current time. Since taste plays such an important role in determining the value of an artwork or antique, having a feel for the current trends in the market will play an important role in understanding the true value of an object. With the vast range of items being sold online, the opportunity to find underpriced objects feeds the appetites of buyers, collectors, and of course, dealers.

“A LEAP OF FAITH IS REQUIRED TO BUY HIGH-END ART AND ANTIQUES ONLINE”

With the absence of personal relationships and without the possibility to inspect artworks, the issue of reputation becomes crucial, if a marketplace wants to ensure that prices reflect their true values. How can sellers signal credibility to buyers and retain trust in the art and antiques up for sale? Good sellers need to distinguish themselves from bad ones. For dealers and galleries a good reputation is vital. Something that is hard to build and crucial to maintain.

When transactions occur through online marketplaces, the consumer is protected by anti-fraud technology. Various other mechanisms have evolved for sellers to signal their credibility and quality to potential buyers. The opinions of others in our sharing economy provides information on prior trading experiences. Allowing buyers to rank and score sellers enables sellers to convey that they were a trustworthy party. Ratings on the buying process, and other areas, (from the accuracy of object descriptions, to the shipping time and charges) all provide reassurance to buyers about their credibility. Transparency on prior behavior is revealing and it reduces uncertainty. The marketplace becomes efficient. There is less need for external regulation, as the online marketplace has effectively crowdsourced (its) regulation.

Is there an upper limit to the type of art and antiques sold online? Above what threshold does this exist? We find that there is a natural upper limit for online sales in art, antiques and collectibles. The online marketplace is less well positioned to meet the needs of collectors. Such buyers and collectors of high end art and antiques where buyers want full confidence in the authenticity of an artwork also want a positive and meaningful relationship with artist, advisor, dealer or a specialist at an auction house. It is hard for online only to currently meet those personal and social requirements.

How is access to digital information influencing the art world and those working in the art industry? How is the art industry's relationship to e-commerce changing? E-commerce requires a willingness to spend online and for a few leading players in the market, e-commerce has shown enormous growth. Traditional auction houses and dealers that venture online offering a transparent online process, access to reliable authentic information, the ability to signal credibility and quality, and to maintain a reputable and efficient marketplace online are able to reap economies of scale and an upward virtuous circle exists.

There is also the presence of other ancillary service providers, surrounding the e-commerce platforms of online sales and external marketplaces. These take a variety of formats, and many business models currently prevail. Aggregators provide an external marketplace, and often also provide a secondary intermediary function. Some aggregators also offer white-label solutions to auction houses, dealers, and marketplaces. Social media platforms provide portals to advertise, enhance credibility and reputation, and create an online presence. The revenue generating potential of these additional agents in the art e-commerce market are further blurring the lines between traditional sales channels. The developments are exciting and provide opportunities for artists to reach collectors and buyers through unique and direct sales channels.

How do artists reach their buyers? The most direct way is for artists to sell directly to collectors. A number of other sales routes exist where artists can reach their collectors, or in this demand driven economy, buyers are tapping in to reach artists online and in so doing discovering new and emerging artists. In the architecture of the art world, there are 12 main sales channels or branches that are most commonly used for artworks and collectibles.

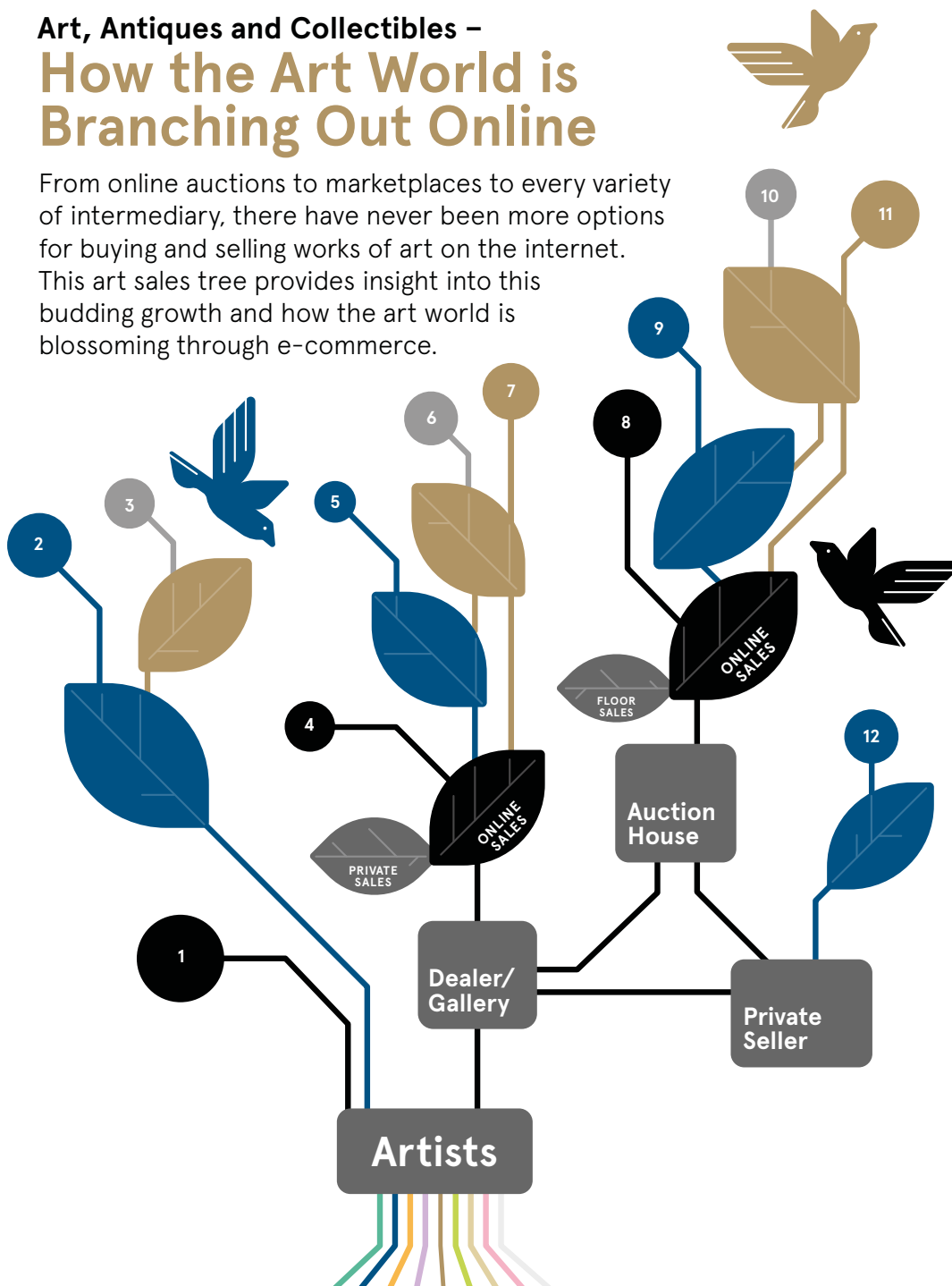
The art world business environment can be depicted as a tree as the infographic (below) reveals how this market is branching out and which sales channels are growing. Artists represent the foundation and roots of this sector. For a healthy environment, the roots of the tree need to be nurtured, nourished and maintained. If the roots and environment are supportive, the tree can blossom and bear the fruits of creative output – the work is then harvested by art world intermediaries such as galleries and dealers, sorted and ultimately sold to a variety of consumers including collectors. In this framework, the internet provides additional (sales) branches and this further growth in the canopy, extends the reach and richness of the tree. There will always be those long-standing and established branches representing important players at the top of the tree, but younger shoots and branches emerging in the canopy, represent new and innovative sales channels which are broadening the overall market represented by the tree's canopy as a whole.

HOW THE ART WORLD IS BRANCHING OUT ONLINE

The ways in which collectors are reaching artists and obtaining new artworks is occurring through a variety of different sales channels (or as depicted in the infographic, as branches). There are 3 main types of sales channels: direct, indirect, or redirected sales. In the primary market there are direct sales from artists, or agents representing contemporary artists. Indirect sales occur via an online marketplace or e-commerce platform with multiple sellers are also available. Branded and white label software solutions are available for and by aggregators and platforms providing the service of facilitating sales, whilst other companies provide intermediary services redirecting potential buyers back to the artist or their representative dealer. In the secondary market, private sellers, dealers, and auction houses operate through similar direct, indirect and redirecting sales branches. The art market depicted as a decision tree is blossoming, and some branches are growing, whilst others are being pruned back. Ultimately growth will depend on how the roots are nourished: nurturing the artists is fundamental to a healthy art market.

Art, Antiques and Collectibles – How the Art World is Branching Out Online

From online auctions to marketplaces to every variety of intermediary, there have never been more options for buying and selling works of art on the internet. This art sales tree provides insight into this budding growth and how the art world is blossoming through e-commerce.





Online Sales



Marketplace



Intermediary



Social Media

SALES CHANNEL



Direct Online Sales



Via Marketplace (Indirect Sales)



Via Intermediary (Software Support)



Via Marketplace + Intermediary (Redirected Sales)

- 1 **Artist online sales:** Artists make direct sales to clients online via their private websites.
- 2 **Artist marketplaces:** An online marketplace facilitates a virtual environment for artists to display and sell their work. Payment is taking place directly on the third party website.
- 3 **Online artist platforms:** An online platform functions much the same as an online marketplace, the main difference being that the sale does not take place here. Buyers are redirected to the artist's website or to offline business details in order to purchase.
- 4 **Art gallery and dealer online sales:** The gallery or dealer makes direct sales online via the company website.
- 5 **Gallery and dealer marketplaces:** The online market place brings galleries and dealers together with buyers on a third-party platform. The marketplace facilitates the sale on their website (usually buy-now).

- 6 **Online gallery/dealer platforms:** The platform provides an online introduction between the buyer and the dealer or gallery, but the sale does not take place on the platform. Buyers are redirected to the dealer or gallery's own website, or to their offline premises.

- 7 **Software provider – online sales:** An intermediary who offers (white label) software for galleries or dealers who do not have the requirement to develop their online sales channel in-house.

- 8 **Auction house online sales:** Auction houses use an online platform with their own name, either to accept online bids to a traditional live auction sale or to run a timed, online-only auction (usually bid-now with some buy-now options). Platforms can either be built internally, or hosted by an auction software provider.

9 **Auction marketplaces:**

There are two types: (1) A website which hosts online auctions for multiple offline auction houses and, (2) An intermediary website through which visitors can follow multiple online auctions from different (online) auction houses. For live auctions the website also collects (absentee) bids from potential buyers and bids on their behalf on the website where the online auction is actually taking place, or live against the room.

- 10 **Online auction platforms:** Allows visitors to browse lots on offer from multiple online auctions. The main difference with 9 is that bids cannot be placed through the website, visitors will be redirected to the auction house's website.

- 11 **Software provider: online auctions:** An intermediary who offers (white label) software for auction houses who do not have the requirement to develop their online sales channel in-house.

- 12 **Private seller marketplace:** An online marketplace facilitates a virtual environment for private sellers (distinct from a dealer or artist) to display, sell and buy works of art. Payment is taking place directly on the third party website.



Social Media: Social media sites convey information across the online art architecture.

Direct sales can be in the form of e-commerce options for artists, galleries and auctions. Artists may sell directly to buyers, either from their studio, their homes, or through personal online websites which provides sales to buyers [1]. However, the structure of the art market offers artists the ability to sell on the primary market through contemporary dealers. In the secondary market dealers may sell directly online to collectors [4].

When there is a physical location, so called “Bricks and Clicks”, galleries with an e-commerce option [4], or LIVE auctions [8] sell through a direct sales branch to buyers or bidders. For example, Heritage Auctions is a traditional bricks and mortar auction house which currently hosts the largest number of live online auctions. Christie's LIVE™, Sotheby's and Phillips all offer live auction sales, where bids can be made through an online device during a live auction. Many traditional auction houses, such as Christie's and Sotheby's, and Phillips, additionally offer a small, but growing number of online only auctions.

These same direct channels can be “online only”. For example, UGallery, and SaatchiArt, are galleries which only sell online through their e-commerce platforms [4]. They represent a large number of artists, yet they still effectively operate as an online gallery (rather than a marketplace) since they represent a curated choice of artists. Likewise, some auction houses only host their own online auctions, such as artnet auctions and Lavacow.

When the e-commerce platform enables multiple sellers to list their objects or set up online storefronts on the platform then the sales channel is regarded as an online art marketplace. Artfinder, artists.de, and BlueThumb provide online marketplaces for thousands of artists [2] and increasing numbers of dealers [5]. 1stdibs and RubyLane are both examples of online e-commerce marketplaces for dealers selling art, antiques and collectibles [5].

Online e-commerce marketplaces also exist for auction houses. Drouot Live, LiveAuctioneers, and Invaluable are examples of marketplaces hosting live and/or timed auctions for multiple auction houses at a time [9].

Many of the companies offering online only auction sales have the expertise and knowledge to host online auctions for a large number of other auction houses, and have expanded their companies by offering a platform that aggregates auction house sales. Companies such as Auction Mobility, Auction Technology Group (The Saleroom), and Invaluable, provide the software for auction houses to sell on their own platforms, and provide a further aggregation of sellers offering art, antiques, and a wide range of collectibles, at all price levels. These software providers offer white label and branded bidding software to auction houses and are reaching out to more dealers to

power online sales on their behalf. They can provide scale benefits when offering a simultaneous consul for multiple auctions across multiple auction houses [10]. Auction Mobility provides white label online bidding software to auction houses [10] and owns an aggregator marketplace, Lofty.com [9].

Auction Technology Group [10] owns The Saleroom [9]. Invaluable [10] powers Invaluable.com [9]. Invaluable also provides this intermediary function for galleries and dealers [7] as well as for auction houses [10].

Bids are placed through these aggregator marketplaces, who power the branded sites. If the bid is elicited from a listing platform, then these online platforms provide a supportive function to the current sales channels. Their function of reaching and attracting new potential bidders is rewarded through a click-through commission for each bidder who is redirected [11].

There are a large number of intermediary platforms which offer support, software, and services. Some redirect sales to the dealer or auction house so that they can facilitate a sale directly, either in a bid-now format, or at auction – bidding online (bid-now option). Artsy started as a platform to promote galleries and dealers to attract a wider audience [6] and interested buyers would be redirected to the dealership. Artsy have recently also moved into acting as a marketplace for auction houses for a commission [9]. Instagram plays a similar function. They have become an important platform for artists, galleries and auction houses to promote sales.

Instagram is represented as the branch which redirects interested buyers to the artist [3], the gallery and dealers [7] and auction houses [11], who in turn can then provide a direct service for artists and dealers to reach interested buyers. Transaction does not take place directly via Instagram, so the platform operates as an intermediary service. Social media is playing an increasingly important role in further helping disseminate information and provide attention within the art sales environment.

A number of intermediary websites exist with highly nuanced services, in a variety of niche markets. AuctionAftersale brings together auction houses and buyers following an auction to facilitate and also redirect sales. Finally, platforms exist for private sellers, to reach buyers, such as ArtViatic, Collectionair or ValueMyStuff [12].

The various sales branches [1] to [12] are provided in the art sales tree infographic above and the 100 online art platforms are represented in the overview of the top of the tree in the infographic below.



THE ART SALES CANOPY

The most powerful players in the art sales world have traditionally been the leading auction houses and international galleries exhibiting at the world's leading art fairs. The internet provides companies with an opportunity to branch out into new growth areas of the market. Online and digital channels enable additional sales branches for collectors to discover new and emerging artists from across the globe. The extended reach of the art sales canopy depicted here, is also broadening the art market in terms of scale and scope. Some companies are crossing sales branches to reach across the canopy. This form of consolidation occurred for example by Artsy moving into auction sales, and Invaluable moving into offering galleries buy-now platforms. Other art e-commerce companies are highly focused and their strategy is to be best in-class in their sales branch.

Online companies in the art, antiques and collectibles space that exist sell a wide variety of objects. Wine and spirits, firearms, and a whole range of collectibles from toys to trinkets, for example. Many of the companies that sell a range of items in the online retail space have and are experiencing large growth and this growth tends to be at the lower end of the market for lower price points. By defining art, antiques, and collectibles above a certain threshold, for example, \$500 across all segments of the market will impact on the value of the aggregated sale of objects in this sector.

The definition of what is classed as an artwork, or a collectible, is a critical consideration and indeed a sensitive subject. We aim to define art so that many in the art industry would recognise the kind of items that are included. In a survey to over 100 art e-commerce platforms, we defined art as objects including fine art, antiques, decorative art, collectibles, haute jewellery, photography, and design, and excluding items such as automobiles and wine. A number of questions refer to art e-commerce and in the survey we define art e-commerce as any type of online activity involving the buying and/or selling of art objects, or the facilitation of such activities.

Using this definition Christie's sells 85% 'art', and Heritage Auctions only 20%. For marketplaces such as Ruby Lane, 20% is sold as art and antiques – the majority sells for less than \$1,000 – and Invaluable sells 50% as art. Aggregating the sales revenue for companies that sell a large proportion of collectibles under a particular price level, such as \$500, will naturally result in a much larger size of the online art, antiques, and collectibles market, than for the online art market, where a particular minimum price level may be considered more appropriate.

Using our definition for those surveyed, we find that at present art e-commerce is \$2.6 billion for art and antiques, and particular collectibles (as defined above), extending to \$3.1 billion for a wider range of collectibles, for example as sold by Heritage Auctions, beyond the scope of art.

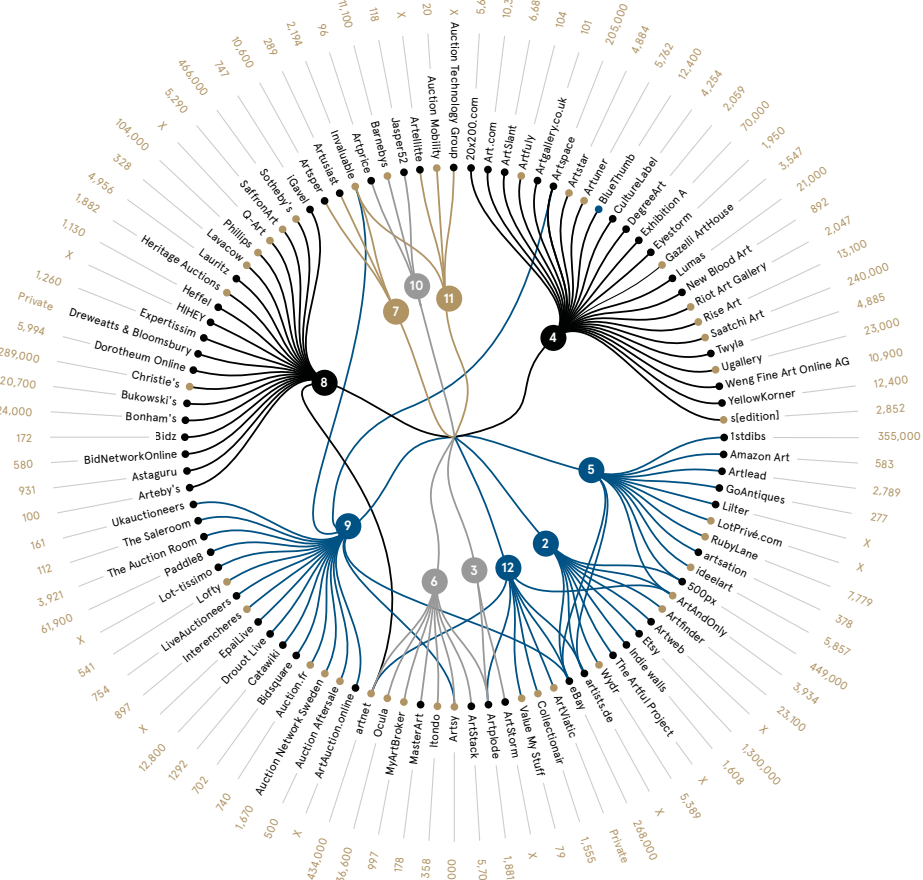
Art, Antiques and Collectibles: Branching Out into Online Trade

The internet and social media provide ample opportunity for companies to branch out into new services and markets. While many are sticking to what they know best, others have extended their branches to multiple services and platforms. What does this consolidation of services mean for the future of the market? Time will reveal which players and branches gain new growth shoots, and which get pruned back.

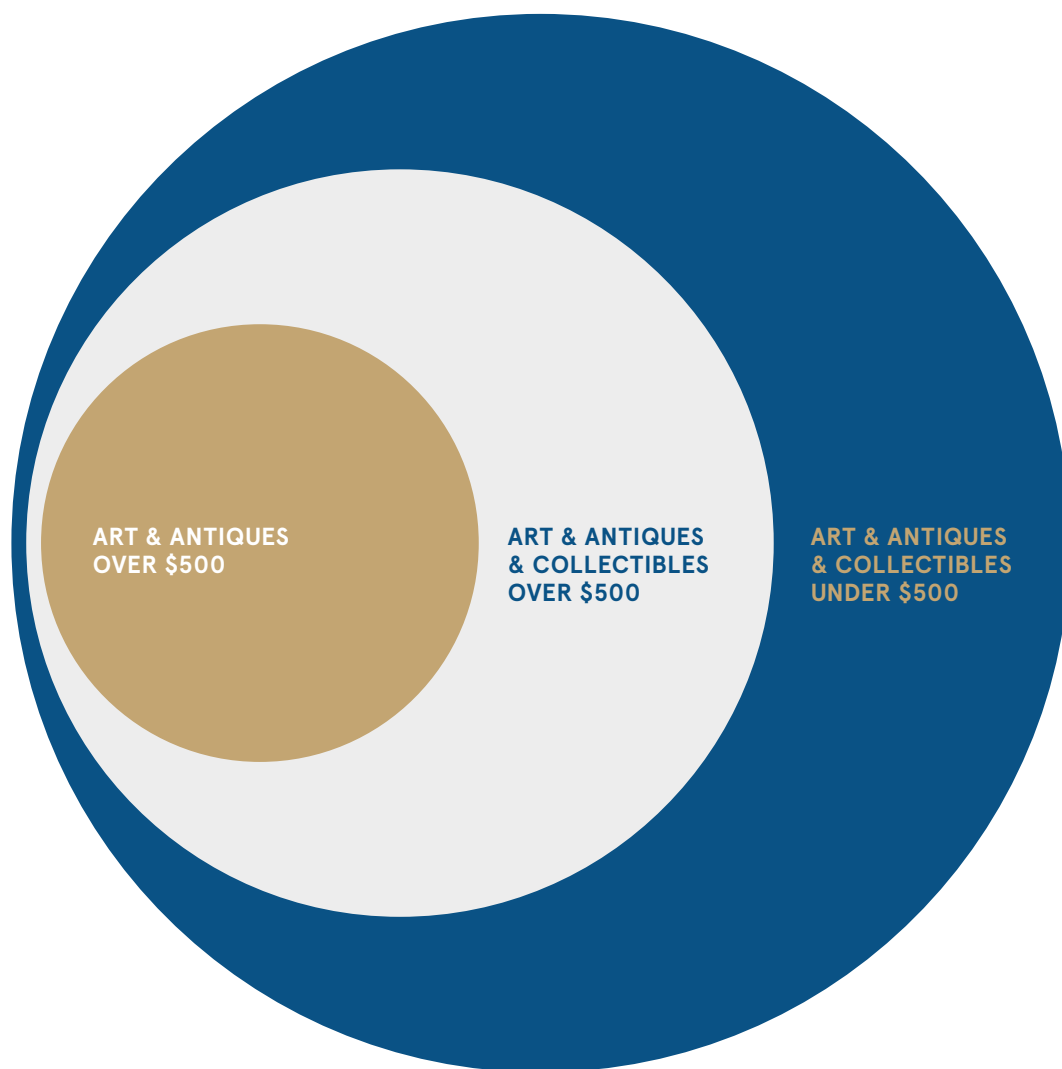
Legend

- Participant in MACCH Art E-commerce Survey
 - Did not participate
-
- 1 Artist online sales
 - 2 Artist marketplaces
 - 3 Online artist platforms
 - 4 Art gallery and dealer online sales
 - 5 Gallery/dealer marketplace
 - 6 Online gallery/dealer platforms
 - 7 Software provider - online sales
 - 8 Auction house online sales
 - 9 Auction marketplaces
 - 10 Online auction platforms
 - 11 Software provider - online auction:
 - 12 Private seller marketplace

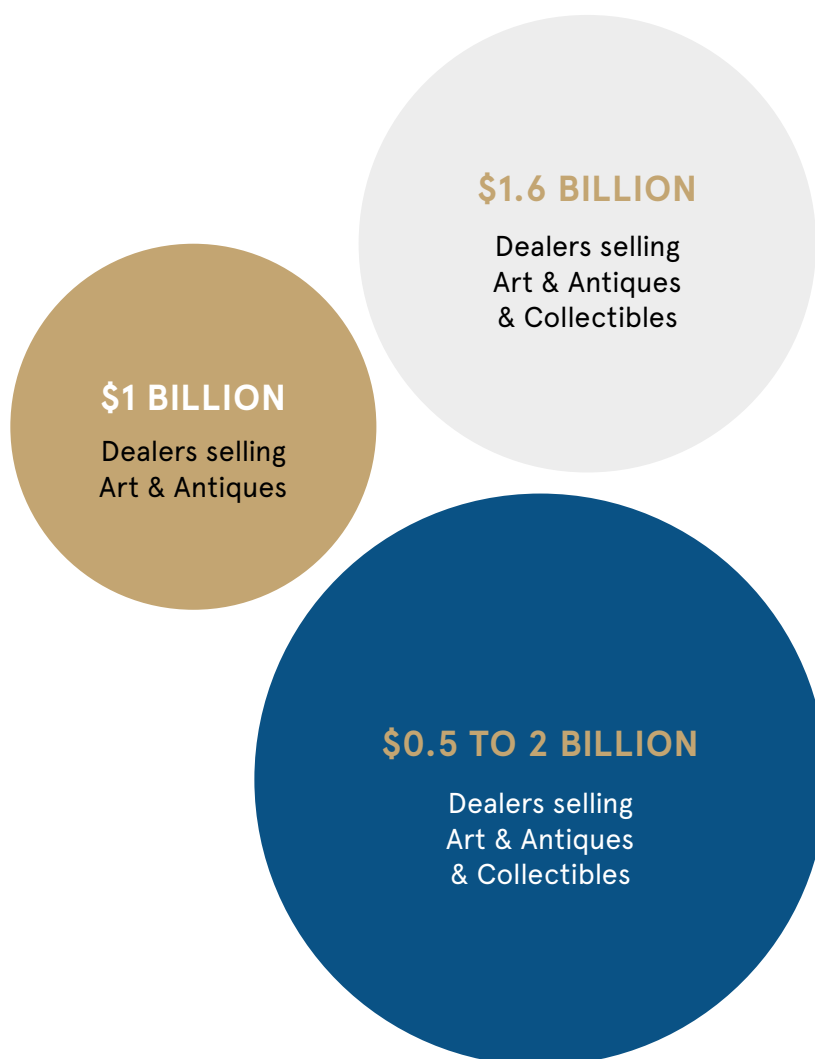
— Number of Instagram Followers as of June 2017



THE SIZE OF THE ONLINE MARKET DEPENDS ON THE DEFINITION AND PRICE RANGE OF ARTWORKS



THE VALUE OF ART, ANTIQUES & COLLECTIBLES SOLD THROUGH DEALERS, AUCTION HOUSES & MARKETPLACES IS AT LEAST \$3.1 BILLION



DIRECT ONLINE SALES FOR ART, ANTIQUES & COLLECTIBLES

ONLINE STORES & VIRTUAL VENDORS

An important area in this year's TEFAF Art Market Report: Online Focus is defining the architecture of the online art market and how the internet has changed the way in which collectors can buy art. Represented as a tree, branching out to capture the broadening of the market's sales, we are seeing traditional sales channels of dealers and auction houses augmented by additional growth in sales through intermediaries. Critically, these branches are supplementing existing sales branches for both artists and dealers. Business to consumer style online platforms have helped to broaden the reach of those wanting to purchase art and antiques, bringing collectors and buyers together online.

Direct online sales paths first emerged for artists, dealers and gallerists to engage directly with collectors and buyers. This provides a route to directly reach buyers online. Websites for artists, galleries, dealers, and also larger institutions, such as museums, are an extremely important initial platform for advertising and providing merchandise. Technology has also transformed the way collections are being viewed. The virtual experience offered, for example, by the Van Gogh Museum, is enabling a greater audience to be reached, as well as providing an extra stream of revenue. This exposure to art is fueling buyers' interest in the age of the demand driven economy.

Thousands of artists and dealers already sell online. For artists, the ability to sell online and to outsource the selling and marketing process has been liberating, eliminating the need to enter into relationships or contracts with dealers. In such cases, artists can retain complete freedom to negotiate prices and sales. Artists can present their portfolios online, and a host of websites exist which enable artists to design their own websites with fairly low entry and start-up costs: Portfoliobox, Moonfruit, Behance, Dribbble, Carbonmade, Crevado, Cargo, Wix, Format, Squarespace and WordPress, as well as more established publishing tools such as Adobe Portfolio.

It is beyond the scope of this special focus report to gauge the number of sales that occur through artists' private websites on a global scale. Although the volume of sales made online by individual artists is significant in number, needless to say the revenue generated by individual artists only represents a small fraction of world art sales in terms of value. Typically, artists' sales go through the traditional intermediary, the gallery, before being traded again in the secondary market via dealers and auction houses, and this is where we focus in this report.

To obtain greater support in the sales process artists can also enlist an agent, a gallerist or dealer to represent them in the market. The additional service that an agent provides can create value for both the artist and the agent, justifying the commission that is

generated through higher sales prices and transaction volumes. The value adding services of gallerists and dealers as gatekeepers: positioning artists, guiding careers, and providing curatorial experience to elevate the position of the artist and defining a position in the art world plays a crucial role in enhancing value.

Less well known galleries, dealers and artists use the direct approach of providing a portfolio or collection online. In fact, the majority of galleries have a presence in the online art space. In a poll from over 600 galleries and art and antique dealers, we found 65% have an online presence to reach a wider audience and enhance sales.

Within the space of online art sales for galleries and dealers there are three general types of galleries and dealers: 1) traditional 'Bricks & Mortar' galleries and dealers that are offline, 2) those with an online presence, 'Bricks & Clicks', and 3) 'Online Only'.

Galleries offer a broad curated choice of artists for private sales worldwide. Alongside viewing the collection in the gallery, online platforms extend offerings to art advisory and art finance products and services. For some of the larger online only galleries, who promote many more artists, such as Bluethumb, U-Gallery, and Saatchi Art, the concept of an online marketplace for artists may seem more appropriate; ultimately their curated approach defines them as online galleries. The ability of an online platform to source from a wide array of artists is redefining how galleries are operating.

"ARTISTS' MARKETPLACES AND ONLINE GALLERIES ARE REDEFINING HOW A GALLERY OPERATES"

As the business model takes on a more curated approach, then the value adding services, traditional to galleries and dealers with bricks and mortar galleries, become more prevalent. Choices are made on which artists to represent. In return those artists obtain the service, positioning and guidance, that is customary in the traditional (offline) setting. Much of this relationship building is gained in the traditional manner, with a personal touch to the relationship.

UGallery, based in San Francisco, represents 500 artists and acts as a fixed price 'buy-now' marketplace for artists and buyers. With a global presence of 30 countries from Latin American to Eastern Europe, there is no geographical boundary to their customers. With luxury shipping from artists' studios directly to the home, UGallery is able to provide a curated service for its global customers. The emphasis is on establishing and

maintaining a direct connection between artists and their clients. "Artists first, and technology second". That being said, the platform is key in facilitating the process, but the relationship between the artists and the gallery is primary in the process.

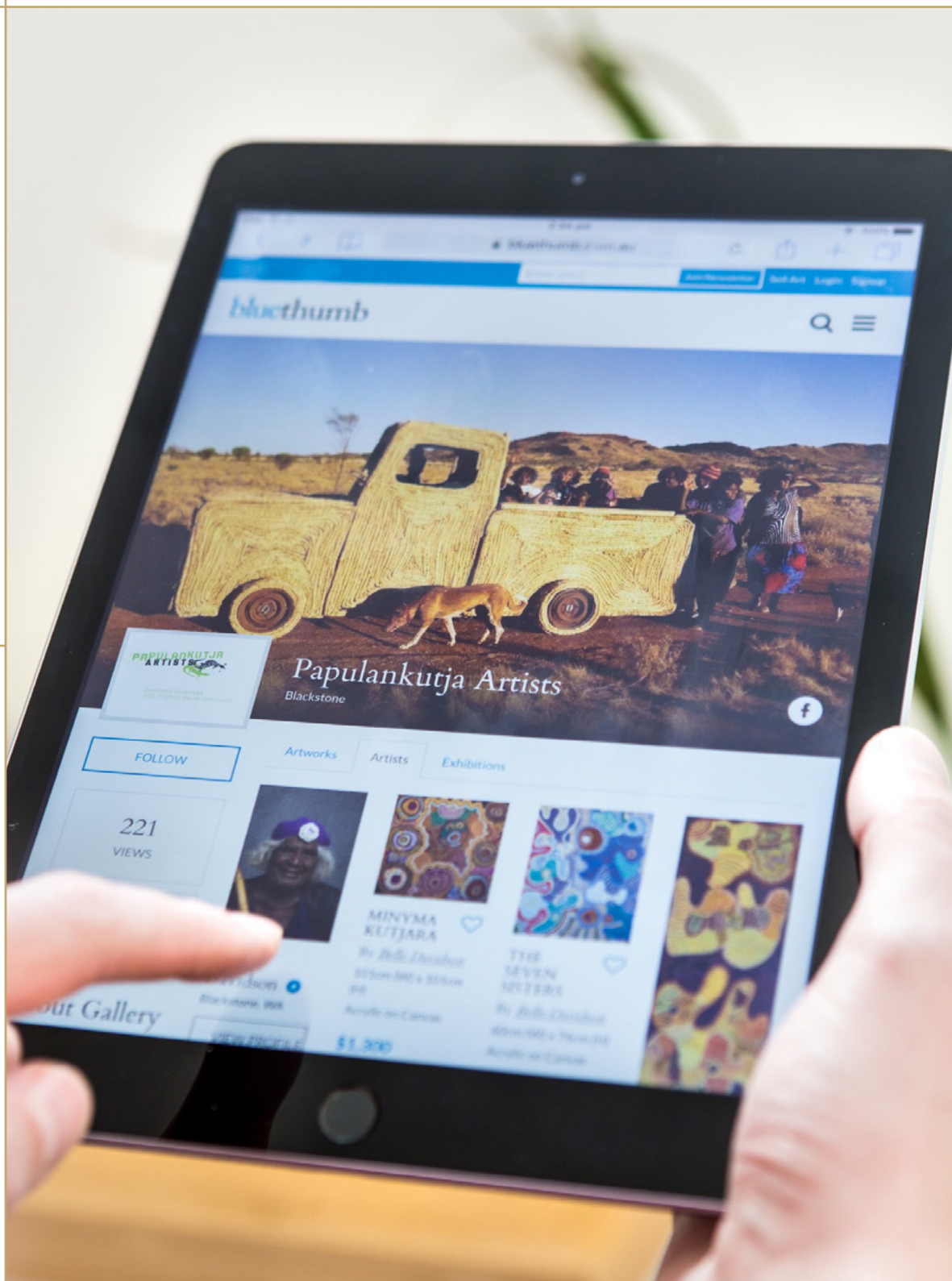
Current online galleries include ArtStar in the US which represents 100 artists, Artgallery.co.uk, ArtSlant, Artfully.com in Zurich with 130 artists, Twyla, Rise art, and King and McGaw. Riot Contemporary has 30 artists, is based in France, and utilizes an external marketplace partner to outsource sales. 70% of their buyers are under 30. These platforms generally sell to national buyers, extending reach to collectors beyond the local community.

Many galleries and dealers provide an option to buy online, notably more common at lower price points. Our survey indicates that around two-thirds of art and antique dealers have some involvement in art and e-commerce. Our online survey poll was sent to over 8,000 art and antique dealers globally, and 673 responded. Of these, 64% stated that they sell online, while 36% said that they do not sell online. Notably, 45% of those who are currently offline have stated they have no intention to move online.

Hence almost 20% of the galleries and dealers surveyed have no intention to move online. This finding is a stark contrast to the near universal proliferation of online retail in other industries and sectors.



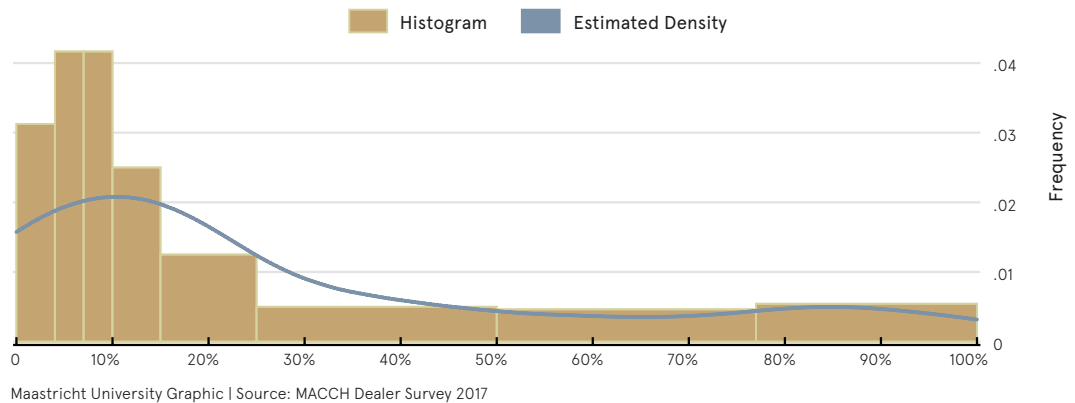
20% OF GALLERIES AND DEALERS SURVEYED HAVE NO INTENTION TO MOVE ONLINE. THIS FINDING IS A STARK CONTRAST TO THE NEAR UNIVERSAL PROLIFERATION OF ONLINE RETAIL IN OTHER INDUSTRIES AND SECTORS



Of the approximately two-thirds of dealers who engage online, we find that only a small percentage of their total sales are attributed to online sales. The distribution is given below for the 329 dealers who were willing to share the percentage sold online.

HOW MUCH DO DEALERS SELL ONLINE?

Percentage of sales sold online



Each bar represents 12.5% of the total probability in the overall distribution of dealers who sell online. Therefore, of those dealers who do sell online, a quarter will sell less than 8% of their total sales online, one in three sell less than 10% online, and approximately half sell less than 15% online. Some galleries sell higher fractions, however from over our 673 dealers who responded to our online poll, overall only 17% sell more than 50% online, which is a very low volume.

On average, of those selling online this percentage is just under 10%. This is in line with the findings from a similar number of dealers surveyed in the MACCH 2017 survey for the TEFAF Art Market Report 2017. A small number of galleries sell a much higher proportion of their works online, and a few sell uniquely online. This is represented by the long right tail of the distribution and it is important to account for it in the market as there are a small number of new galleries with a much higher percentage selling online.

Those galleries that make a higher proportion of their sales online, represented by the right side of the distribution, are creating new markets and reaching new artists. It is here that value innovation is creating access to new demand for gallerists. Good examples of this are Spotteart.com, Indiewalls and UGallery.

Indiewalls, based in New York, is a platform for artists and art buyers. Although they do not require a joining fee, works and artists do need to be accessed and accepted by a curatorial team. The company provides an additional service of interior design in the commercial sphere, currently focusing on the hotel industry. This is representative of a trend that is broadening the art market in many countries by providing artworks from emerging artists to mainstream business consumers.

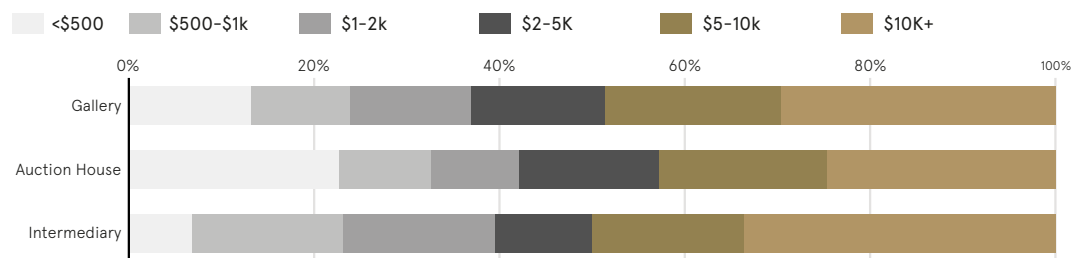
“THERE IS A GROWTH IN THE NUMBER OF ONLINE ONLY GALLERIES CREATING INNOVATIVE VALUE FOR THE ART MARKET”

The 100% online gallery, UGallery recently announced an exclusive partnership with Crate and Barrel to sell original artworks from top emerging artists. Since the launch, they have experienced good growth in this innovative area of the market, with sales beyond initial expectations. Already working to expand the collection into other channels we are seeing that many galleries are creating demand for artworks, which were previously satisfied through consumer products. They state that almost 80% of online buyers spend less than \$5,000 per piece. With many items in this type of collection ranging from \$700 to \$2,600, this is another example of how fine art is being introduced to mainstream collectors.

Some marketplaces, such as ArtandOnly.com sell only above \$10,000, and Artuner above \$5,000. Others, however, such as IdeelArt.com sells 60% between \$1,000 and \$2,000 dollars. Some auction houses sell a high fraction at the low end of the price range. Lavacow, for example, an online only auction house in Bucharest, Romania sells 60% below \$1,000. Heritage Auctions sells 60% below \$5,000. Even Christie's, only sells 20% over \$10,000. Sotheby's sells 30% above \$10,000, and Phillips's online sales are more towards the higher price range, with 70% above \$10,000.

“MUCH OF WHAT IS SOLD THROUGH E-COMMERCE IS AT LOW PRICE POINTS. HENCE THE DEFINITION OF THE TYPE OF ART, ANTIQUES AND COLLECTIBLES USED, AS WELL AS THE MINIMUM PRICE LEVEL HAVE AN IMPORTANT EFFECT ON THE AMOUNT OF ART THAT IS TRANSACTED THROUGH E-COMMERCE”

PRICE RANGE OF ART SALES
By sales branch



Maastricht University Graphic | Source: MACCH Art e-commerce Survey 2017

This price band is in line with the range that galleries shared with us on an aggregate level for their online sales. Auction houses sell a larger fraction below \$500 dollars than galleries and intermediaries. All sales branches sell half of their inventory at less than \$5,000, slightly more than a quarter between 5 and 10 thousand dollars, and just over a quarter above \$10,000.

Sales revenue for most individual galleries with a 'brick and click' online presence is estimated to be a small fraction of overall sales. We have seen that of those sales, a large fraction is at the lower end of the price range. Even for highly reputable leading contemporary art galleries, online sales prices generally fall in the lower end of the price scale. Essentially the offering is a fixed price offer, and buyers can click through

online to an 'add to your shopping cart' option, sometimes with online discount codes and gift vouchers available to give the impression that there is a reduction in price. If further negotiation is required, the possibility also exists to make an offer, rather than opt for the buy-now button.

Art, craft and even mass production items are sold through online marketplaces. Amazon art has a category for fine art, alongside books and barbeques. There is also a blurry line in the art e-commerce market between what can be defined as an authentic online sale. For example, an object that sells offline with help from an online presence to attract buyers, or an object that sells online following offline viewing or pre-negotiation. Liaising with the client and viewing the artwork in the gallery, and nurturing the relationship between dealer and client, is part of the sales process that often requires face to face contact as well as significant time invested far before an online sale can take place. Saffron art, for example, is one of the early pioneers in the online art sales space, since 2000 and although they do sell artworks online for prices in the range of \$200,000 and above, much of the work is done beforehand in person.

"FOR HIGH QUALITY ARTWORKS SOLD AT AUCTION, THE MAJORITY OF THE SALES PROCESS IS DONE BEFOREHAND IN PERSON"

HUGO WEIHE, CEO SAFFRONART

For those art and antique dealers who sell online, we found a fairly uniform distribution of the percentage sold online for differing firm sizes. Although a few galleries are moving primarily online, our sample showed no strong indication for smaller galleries to be selling a higher percentage online than larger galleries.

There appears to be no apparent relationship between the amount sold online and the business size. Assuming our sample of dealers is representative of the world's art and antique galleries and dealers, we can make a general assumption that two-thirds of those dealers sell online. This means that of the \$26 billion dealer industry, approximately \$1 billion is sold currently by the 64% of art and antique dealers and galleries that have an online presence, resulting in 4% of all dealer sales, in terms of value, taking place through online channels. Although the market for online sales is small for art and antiques, the growth stated by these dealers with an online presence responding to the survey for 2017 is extremely high at 19%. Relatively the online sector is expanding.

These online sales estimates come from directly asking galleries and dealers what percentage of their revenue they generate online. Indirect figures can also be gained through the e-commerce platforms that host these sales, such as 1stdibs and RubyLane.

IN SHORT

The Issue

Given that the top business concern for dealers is acquiring new clients, the internet has created a global reach and access to a greater audience. The main reason to create an online presence is to provide a platform to reach a larger pool of potential consumers, as well as create pre-sales awareness and interest. Two-thirds of dealers sell online, yet in terms of value the percentage sold through the online art sales tree is currently a small fraction of overall sales. Worldwide private dealers sell around \$1 billion online.

Why is 'Art' not selling more online?

Lack of a physical presence in the virtual world and weak personal relationships hinder online sales at the higher end of the market. Those online gallerists offering additional services are creating new demand and adding innovative value. Rather than a mere shift to move online, the art market is broadening.

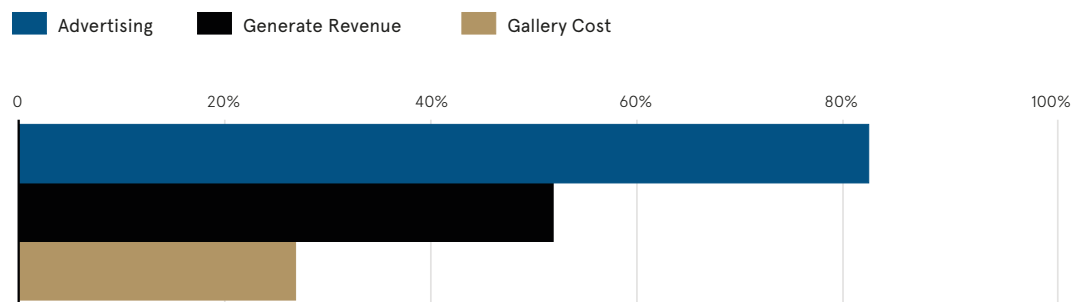
In Future

As technology advances, the ability to mimic the senses sufficiently to provide an increasingly tangible and emotional experience of interaction with artworks will revolutionise the online space and affect relationships between dealers and collectors. Improved measures for greater trust online will result in growth for higher end priced works in art e-commerce.

WHY ARE DEALERS EMBRACING ONLINE SALES?

The reasons dealers are embracing online sales becomes apparent from our poll, where over half of the respondents were willing to share further information on their sales revenues and motivation to move online. Dealers were asked what their main reasons were for moving online of which 83% responded that they wanted to 'reach a wider public through social media and listing platforms'. This is shown as 'advertising' in the graphic below, and effectively is to reach the younger demographic.

WHY DEALERS ARE EMBRACING ONLINE



Maastricht University Graphic | Source: MACCH Dealer Survey 2017

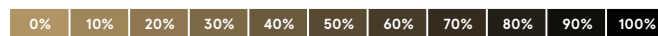
Over 50% said that they 'moved online to generate additional sales revenue', whilst just under a third stated that the move online 'is more cost efficient over maintaining a physical gallery presence'. As property prices have skyrocketed in many of the traditional art clusters including historic city locations, and rental space has become more expensive, the appeal to move online is growing.

Furthermore, as online tools for social media enable a broader reach globally to buyers, the benefits of online are outweighing the costs of traditional bricks and mortar locations. Lower overheads are incentivising 27% of dealers and galleries to move online. Those that have already secured a reputational presence in the market are more easily able to move away from high-end retail space in expensive central locations.

The Internet Age: Millennials Are Going Online to Find Works of Art

Artists and dealers are meeting their younger buyers online, with targeted e-commerce platforms and a social media presence. Technological advances that raise trust, efficiency and transparency will encourage traditional buyers to join in the digital conversation.

Proportion of Buyers by Age



SHARE OF DEALER RESPONSES

Under 30



31 to 45



46 to 60



61 to 75



76 and over



MACCH Dealers Survey 2017

Share of U.S. consumers who...

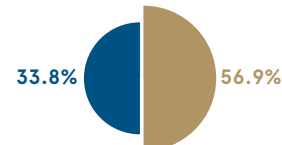
...discovered art through Instagram, Pinterest or other social media

...would buy art online

18 to 24 yrs.



25 to 34 yrs.



35 to 44 yrs.



45 to 54 yrs.



55 to 64 yrs.



65 yrs. and over



Invaluable 2016

The largest share of traditional buyers from dealers and galleries is aged between 46 and 60. We find a smaller but similar sized fraction of buyers ages 61 to 75 as we do from 31 to 45. Those aged 76 and over generally represent at most 10% of buyers, and also those under 30 make up less than 10% of buyers. Dealers are moving online to reach a wider audience and the internet facilitates finding a broader younger audience. A survey by Invaluable to over 4,000 Americans also highlights how the younger demographic is discovering and considering to buy art online.

DEALERS WHO TEND TO MEET NEW AND PROSPECTIVE BUYERS ONLINE ARE MUCH MORE LIKELY TO MAKE MORE SALES ONLINE:



44%

44% MORE LIKELY TO MAKE A HIGHER PERCENTAGE OF SALES ONLINE USING 3RD PARTY PLATFORMS AND



98%

98% MORE LIKELY THROUGH THEIR OWN WEBSITE*

* The odds ratios for this analysis are estimated using an ordered logit model, after controlling for age and estimates are highly statistically significant.



WHAT CONSTITUTES AN ONLINE SALE FOR DEALERS?

This is, in fact, a contentious question. Having enquiries regarding artworks that are posted on social media sites, such as Instagram, and from website pages, is certainly increasing exposure, and part of the pre-awareness stage of developing a relationship that leads to a sale. However, it may or may not directly result in an online sale. Nonetheless without an online presence the sale more than likely would not have taken place. In this sense, an online sale represents and can be defined as a sale where any part of the art sales process has an online element.

This is similar in nature to the exhibition and exposure at art fairs. Sales made after the art fair should be differentiated from sales made at or during the fair. However, if the buyer was made aware of the artwork for sale at the art fair in which it was presented, then indirectly the art fair provided a channel to the consumer and value adding service within the sales process. The intangible effects of advertising and marketing online are similar in character and therefore represent a very important part of the art sales process.

As we become more accustomed to searching for information and viewing online as a society, an online presence is becoming increasingly important and even expected by consumers. An online presence and visibility as well as the availability of relevant and timely information online will only become more important as the younger generation, growing up in this context adds to the next generation of collectors. As their wealth increases and their desire and capacity evolve with age, an online presence becomes a necessity rather than a choice for successful survival in the market.

WHICH SALES CHANNELS ARE DEALERS USING ONLINE?

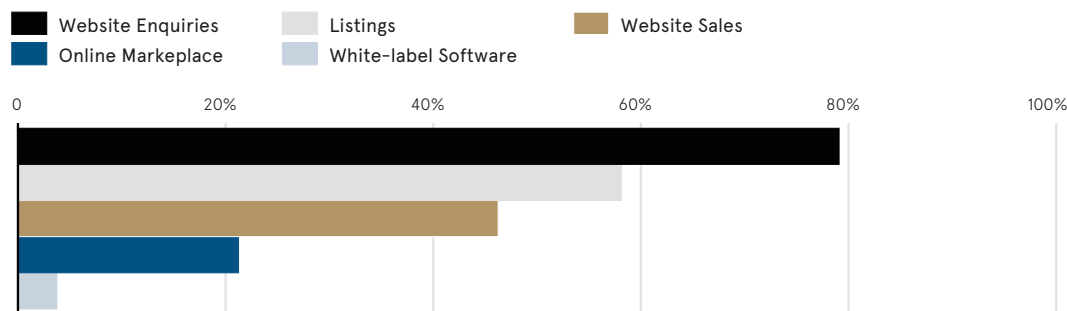
Dealers were asked which sales channels they use online. Representing the four different sales branches in the first infographic of the art sales tree, dealers indicated which of the following sales channels they are using:

- Have their own website through which enquiries can be made and potential sales could subsequently follow
- Have their own website and e-commerce sales platform to facilitate sales
- Use a white label product (so the brand software is not shown) to power e-commerce
- List with an online platform that redirects sales to them (e.g. artnet, Artsy, Barnebys)

"DEALERS ARE BRANCHING OUT IN THE MARKET AND FACILITATING NEW GROWTH"

Overwhelmingly we find that of those dealers that embrace the online market, the majority do it, so that enquiries can be made. Almost 80% of dealers who conduct online sales have their own website for enquiries. Those that do not will either have a listing on a different website, or offer a 'bid-now' e-commerce sales platform on their website. A large proportion, 58% use a listing facility, with online platforms redirecting sales to them directly. Almost half, 47%, sell via their own website, whilst only 22% list with an online marketplace, such as 1stdibs or AmazonArt.

HOW DEALERS ARE EMBRACING ONLINE



Maastricht University Graphic | Source: MACCH Dealer Survey 2017

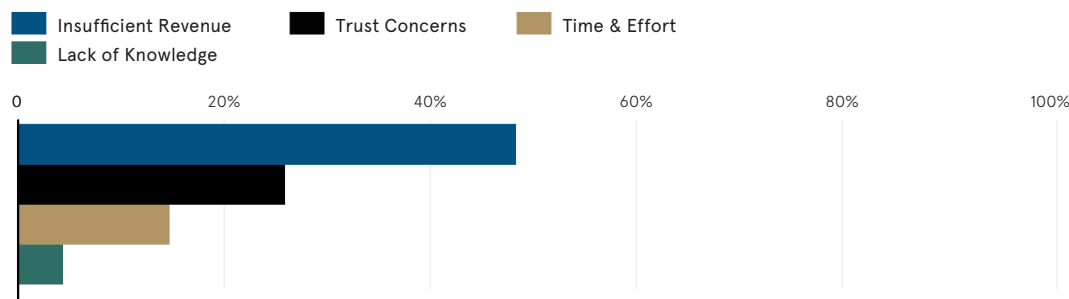
WHY THE LACK OF DESIRE TO MOVE ONLINE?

There are a number of reasons why the online market for art and antiques is fundamentally different to many other sectors and commercial marketplaces. The cost efficiency of an online e-commerce marketplace has a strong advantage when standardised and homogeneous goods are offered. This is less so at the higher end of the market, and at the lower end of the market there are more alternative options, or substitutes on offer.

For heterogeneous items with an intangible non-pecuniary element derived from emotion and passion affecting the senses, it is much harder to convey such physical attributes through an online medium as the current technology allows. Rather than being a substitute, technology and innovation supplement the current status quo thereby augmenting the art market. The same can be said for artists that can now be seen and heard; galleries can reach a wider public through digital platforms; museums offer virtual tours; auction houses can stream live auctions; and intermediary services can act as go-betweens for the various industry players. All of this provides functions that we did not even realise we needed but which have the potential to enhance the experience and support the overall market. This is part of an industry which is providing greater awareness and an efficient means to branch out to a larger consumer base.

Many dealers have resisted the move to online sales. The physical presence is perceived to be vital when selling more expensive artworks, and building and maintaining relationships to ensure that trust is forged between the client and the dealer requires time and effort. If this basis is not there then many dealers and galleries do not see the move online as a sufficiently attractive means for conducting sales.

WHY DEALERS ARE NOT MOVING ONLINE



Maastricht University Graphic | Source: MACCH Dealer Survey 2017

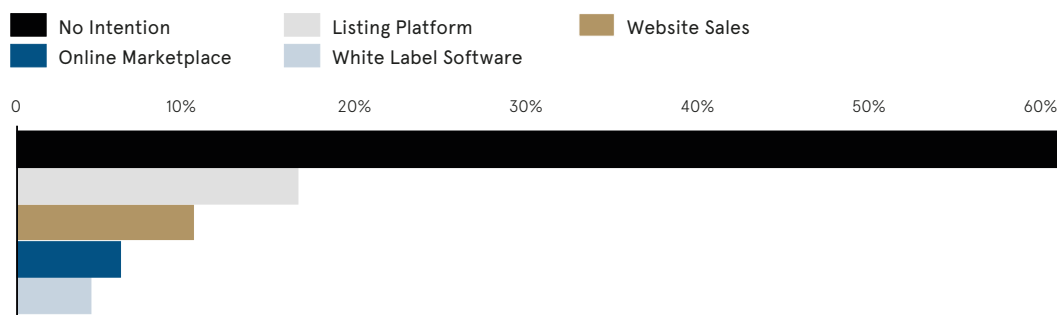
For those dealers who answered 'no' in our online poll for selling artworks online, we asked them what is the main factor for not moving to introduce an online sales channel. Dealers had the choice between:

- Lack of knowledge and/or a lack of familiarity with social media
- Too much time and effort in developing and maintaining an online platform
- Do not expect online sales revenue to generate sufficient additional stream of income to warrant the investment
- Reluctance or unwillingness to share sales data and information to a third party facilitating sales

Almost half of the dealers surveyed suggested that insufficient revenue or a lack of direct sales from e-commerce was the main reason not to move online. In effect the revenue generated does not warrant the cost. The second most important reason was due to issues of trust. It is apparent that there is a strong reluctance or unwillingness to share sales data and information to a third party. This was more important than the potential knowledge gap or the additional time required.

Furthermore, we asked those who answered 'no', the following question. As your gallery is not currently engaged in e-commerce on your own website, is it something your gallery has considered?

HOW OFFLINE DEALERS INTEND TO MOVE ONLINE



Maastricht University Graphic | Source: MACCH Dealer Survey 2017

A large fraction of dealers who are currently offline, prefer to stay offline. Over 60% of dealers who are offline have no intention to move online. From the overall sample this is just over 20%.

Top 5 Business Concerns



71.78 %

Acquiring
new clients



49.5 %

Acquiring and
sourcing
new works



49.01 %

Costs associated
with exhibiting
at art fairs



46.04 %

Ability to
make a year-
end profit



43.07 %

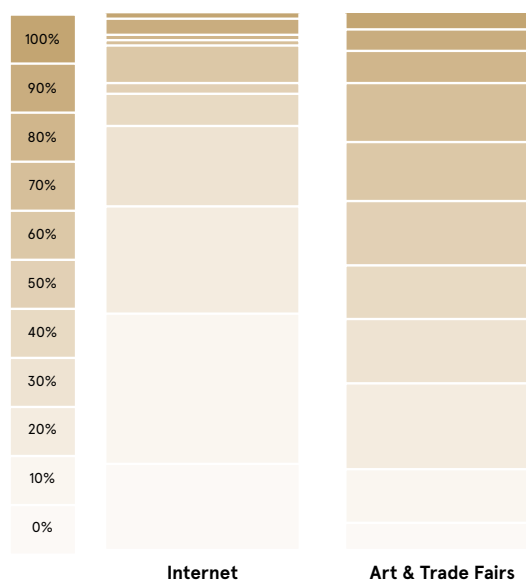
Maintaining
and managing
client base

The top business concern in the TEFAF Art Market Report 2017 was the ability to acquire new clients. At the same time, we find the internet is the second most important tool enabling dealers to meet prospective new buyers. Art and trade fairs are the most important platform. Creating and maintaining an online presence is helping dealers address these business concerns. From the graphic below we see that a similar share of dealers answered that they meet 20%-70% of their new and prospective buyers at art fairs. In contrast nearly a third of dealers meet 10% of their new and prospective buyers on the internet, and half of dealers meet between 20% and 40% of their new buyers online.

The third reason (not shown below) was introductions from other buyer clients.

Where do you meet your new and prospective buyers?

SHARE OF DEALER RESPONSES



The outreach of the internet is extensive and one of the most attractive features for dealers is that it helps to acquire new clients. When asking dealers about the motivation to move online, the top reason given for an online presence was to expand client bases, before generating revenue.



20%

DEALERS WITH A HIGH RANGE OF BUYERS BETWEEN 30 TO 45 YEARS-OLD ARE 20% MORE LIKELY TO SAY THAT INTERNET SALES WILL INCREASE IN THE FUTURE

ACCORDING TO THE MACCH DEALER SURVEY 2017



19%

19% OF UNDER 35-YEARS-OLDS SAID THEY HAD BOUGHT THEIR FIRST ARTWORK ONLINE IN 2016, UP FROM 15% IN 2015

ACCORDING TO THE HISCOX ONLINE TRADE REPORT 2016



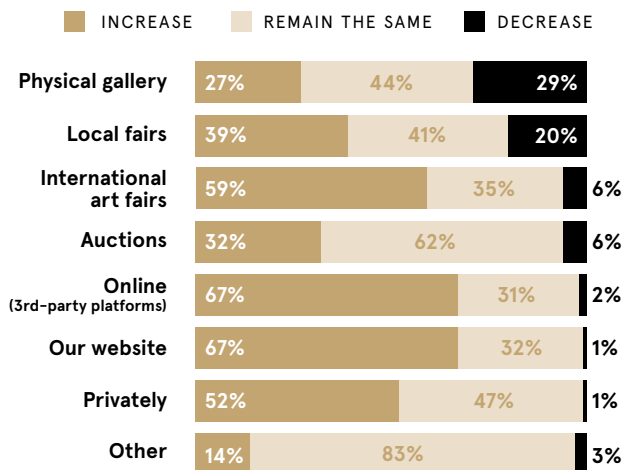
<30

DEALERS WITH THE MOST NEWLY ACQUIRED BUYERS WERE THOSE WHO CATER TO A YOUNGER DEMOGRAPHIC OF BUYER <30 YEARS-OLD

ACCORDING TO THE MACCH DEALER SURVEY 2017

In the same survey to over 350 dealers and galleries, representing all parts of the dealer market we found that over two-thirds of dealers globally see direct sales through their own websites as a growing channel for art sales. From the question: How do you expect the transaction volume to change in the future? The top three answers were 67% for online (third-party platforms), 67% own website, and 59% with international art fairs.

For the following sales channels, how do you expect the transaction volume to change in the future?



Source: TEFAF Dealer Survey 2017.

Those dealers with a high range of buyers between 30-45 are 20% more likely to indicate (all else equal) that sales will increase through the internet in future. Dealers with a young client base, however, were not more likely to sell more online during 2016.

Online sales through third party platforms (marketplaces) are equally important for dealers. If the gallery joins an external market platform then we refer to this as a marketplace for dealers, which is part of the analysis in the following section.

ONLINE MARKETPLACES FOR ART, ANTIQUES & COLLECTIBLES

ONLINE MARKETPLACES

An online marketplace has the advantage for artists that they do not need to enter into relationships with galleries or dealers. For many artists who are unable to be represented by a gallery, they still have access to the marketplace and can reach collectors, albeit without the endorsement or other services that a gallery provides.

Artists can create an online presence using a virtual gallery, such as those market platforms specific to artworks with typically no or little curated approach to participating. Based in London, Artfinder provides a marketplace for 10,000 artists, Wdyr recently launched in 2015 in Zurich provides an online space for 2,600 artists. Others such as Artists.de and Art&Only, based in Geneva, offer a marketplace for artists, dealers, and collectors. Art&Only operates at the higher end of the market, facilitating sales for artworks over \$10,000 dollars. Whereas Collectionair in Dubai, a marketplace for collectors selling artworks from over 1,000 artists from \$500 to \$5,000.

In cases when the online platform becomes a curated space, the marketplace becomes more in line with the traditional model of a gallery or dealership as the unique seller. Sales can be conducted directly online [4], or again through a different online marketplace for galleries and dealers [sales channel 5]. The advantage is that the traditional services of the dealer are engaged in the transaction process, and the value of the dealer is a service provider of expertise. Additionally, a white label solution can be provided for dealers such that they can maintain their own branding [6], which is analysed in the final section.

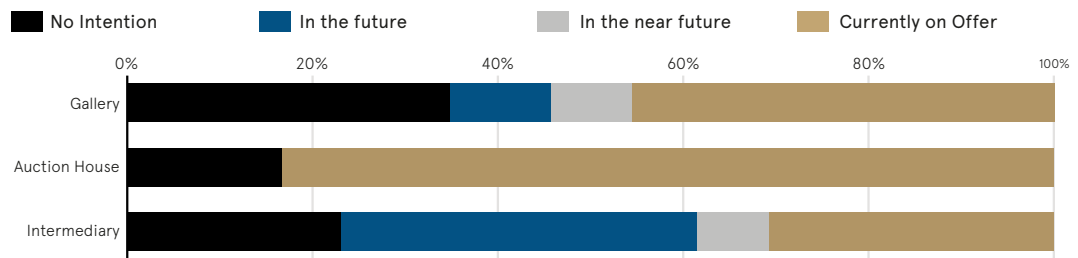
The line between a traditional gallery of art dealers which provides a physical space where art is sold, and the online curated gallery portal is blurred when a virtual gallery acts in the same way as a traditional marketplace for artists. An online marketplace for artists can provide many of the same functions that a traditional dealer provides, such as brokering sales. One major difference is the degree of curation and hence the degree of commitment from both parties, the artist and the dealer. We maintain this distinction in sales channels [2] and [5], where the online gallery is a portal/hub for a large number of artists, and the commission is generally less than a dealer would charge, often between 10-20%. Lower rates of commission reflect the reduced value added services that a marketplace offers, since curatorial experience and placement are not provided.

Marketplaces function as an alternative form of intermediary with the benefits of an extensive, often worldwide outreach. When we asked dealers, auction houses and intermediaries if they were interested in adding any further applications or services to facilitate e-commerce, and in particular exhibition space, we found that intermediaries

were much more likely to move into a physical space in the near future (within the year) or in the future (within 5 years). There is widespread agreement that the offline art world is gradually moving online, whereas those who have started in the online space see the move towards a physical presence as an important development. This would underscore the importance of the social context, and personal interaction, as features augmenting the online presence.

EXHIBITIONS OR PHYSICAL SHOWROOMS

Plans to offer by sales branch



Maastricht University Graphic | Source: MACCH Art e-commerce Survey 2017

Marketplaces for art dealers have seen an enormous growth over the past few years with e-commerce for art markets having opened up sales channels.

Typically for fixed-price marketplaces, such as 1stdibs and RubyLane, the latter servicing 2,500 dealers. Based in Shanghai, Ocula is a marketplace for 165 galleries. Other formats, such as bid-now through live and timed auctions are analyzed later.



FIXED PRICE ONLINE MARKETPLACES

When a fixed price is offered, no-bidding takes place and the format becomes 'buy-now'. This format of marketplace is typically in place for artists, dealers and galleries offering art and antiques for sale with a buy-now option, (as described in the previous section on direct sales). Amazon, with annual sales of \$136 billion, is the largest and most prominent example of a fixed price marketplace where multiple buyers and sellers come together. According to The Economist, about 5% of retail spending in the U.S. takes place on Amazon's e-commerce site. Growth of over 15% per year for over a decade has fueled the interest in e-commerce.

Online platforms such as Amazon, eBay, Alibaba or 1688.com overall can easily make up more than \$0.5 billion of online sales in the art and antiques trade. This amount depends crucially on the definition and threshold used for items sold. The e-commerce giants of Amazon, eBay and Alibaba sell billions annually, hence a distinction about what should be considered art and antiques is required when determining the size of the market. The choice of a minimum price level in determining which objects sold through these huge retail online marketplaces has far reaching implications on the overall size of the collectibles market.

eBay was initially an online auction marketplace, with a virtual auctioneer collecting bids, and bidders bidding incrementally until the highest bidder wins. The introduction of 'buy-it-now' during their auction process has revolutionized e-commerce in the online retail space. 'Buy-now' allows impatient bidders the ability to pay a premium to ensure that they obtain the object, or for sellers to ensure a sale at a chosen price point. The desire for immediate purchase combined with a desire to spend less time online is driving the demand towards fixed price private sales.

The art market has developed business models to try and emulate the success of the online retail market. In the online art business there are a range of business models across the various sales branches. The technology sector, with its large number of e-commerce start-ups, is a naturally fluid place, as each company and platform aims to find its niche market. Broadly speaking, there are two strategies, across different segments of the market. Firstly, consolidation across sales channels to obtain market power, and secondly, specialization and focus to maintain expertise and competitiveness. Many companies are taking the strategy of broadening their scope to reach a larger audience. This means moving into multiple sales channels and typically moving into the domain of other platforms, and thereby increasing competition in these markets. For example, Artsy is moving into auction markets, and Barnebys is moving into serving galleries too.

The other business model approach is to remain highly specialised and focused on the niche market where they have the most competence. Given the high level of competition only a few market players are likely to survive. It is vital that whichever sales channel the focus is on, the approach taken has the magic formula to be the best in that particular arena. For those with the ability to dominate in terms of size, then moving into other channels will be beneficial without losing market appeal and thus market share in the area of expertise and specialisation. There is differentiation in price points across the market. There is great variation in the price segments and the subsequent buyer attributes that the various business models are adopting.

Generally, there is evidence to suggest that the buyer profile of those who buy online is younger. As the tech savvy generation of buyers from the first wave of internet startups becomes older, they are accustomed to dealing online. As the younger generation of consumers accustomed to online channels matures, they too are likely to remain at ease with using the internet to buy art.

An important question remains, is there a general move towards consolidation in the online market? Currently, there is no clear market player with overall dominance. Furthermore, there is also no clear disruptor in the market with the aim or ability to take such a large market concentration that they dominate the market at others expense. This may change as eBay enters this market more aggressively and enables others to merge to provide an alternative competitive player. Auction houses also have the ability to acquire more companies who provide synergies to their online activity or they may continue their efforts in developing their own auction platforms.



LIVE AUCTIONS

The art world is very familiar with the traditional open outcry format of most auction houses. Christie's and Sotheby's are the largest offline auction houses in the world, dating from the 18th century, and are among the oldest market institutions in the art world. The style of auction format used dates back to at least 500BC. In terms of total sales, Christie's and Sotheby's are closely followed by the large Chinese auction houses, Poly International Auction Company, Beijing Council International Auction Company, and China Guardian Auctions Company.

The ascending auction format is traditionally used for selling a wide range of goods and services. Prices ascend with bidders raising paddles until the highest bidder wins, and the item is hammered down (or knocked-down) by the auctioneer. Absentee bidding is a common element in the open outcry auction format, with auction house clerks collecting bids prior to the auction and then bidding on behalf of the absentee bidders during the auction.

Auction houses adapted to accept telephone bidding and many have allowed online bids to extend their traditional sales channels. The advantage of moving online is that by connecting bidders virtually, broader audiences can be reached, thereby increasing the number of potential bidders. Live auctions occur in real time with the auctioneer sourcing bids from the floor, via the telephone and absentee bids and online.

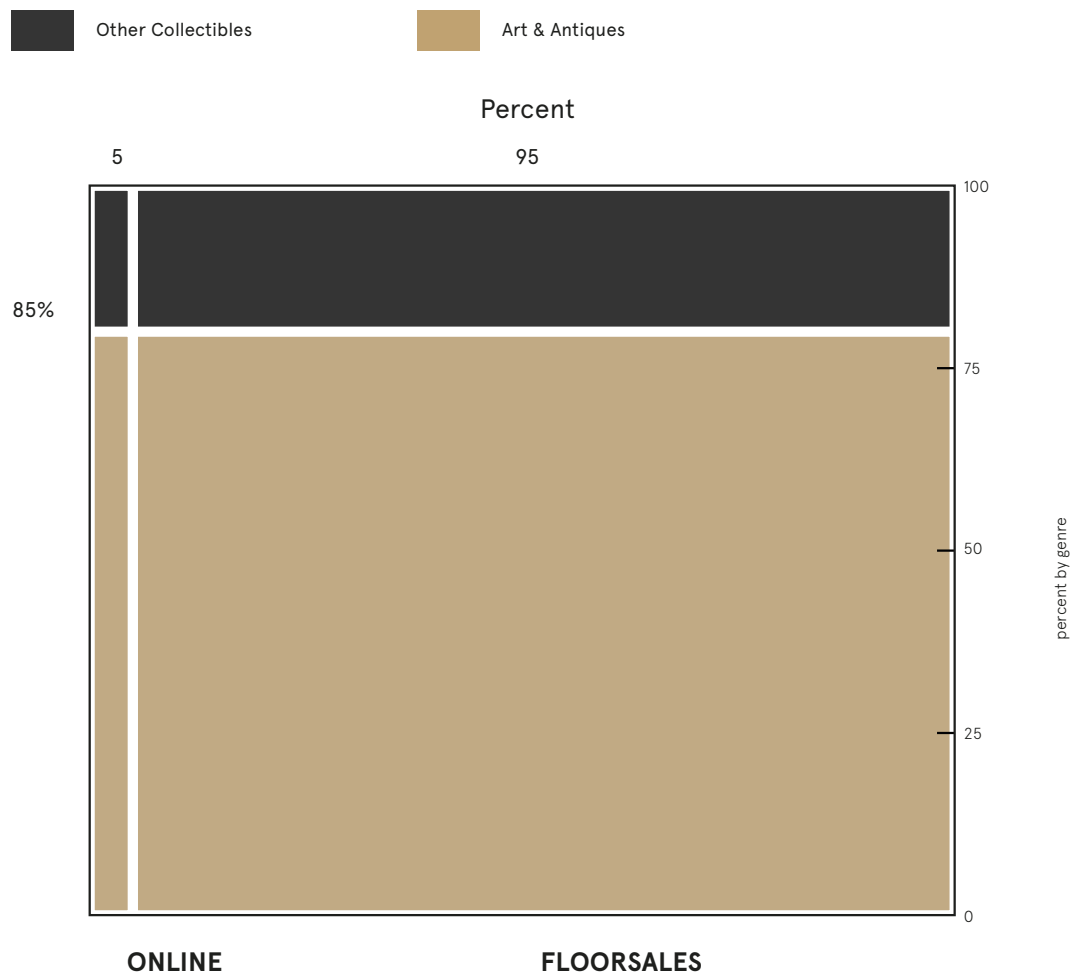
Many auction houses offer online auction marketplaces for live sales, such as Christie's LIVE™, Drouot Live, and Heritage Auctions, who have all developed their own auction platforms to run proprietary auctions. Others, such as Sotheby's Live, Phillips, Doyle New York, Wright Auctions and Freeman's to name a few, have outsourced their auction marketplace platforms to a third party software provider, who provide a platform for hosting live auctions. Sotheby's Live and several hundred other auction houses are powered by Invaluable, whilst Phillips and Wright Auctions are powered by Auction Mobility. The auction house can host online live auction bidding on their own websites using a white label platform to develop their own relationships with clients online. Invaluable's white label technology allows their partners to simultaneously acquire live bids from the Invaluable website as well as the auction house's website via a single portal.

During 2016 this was just over 5% of the \$4.25 billion sales reported by Christie's New York, London, Hong Kong, Paris and Geneva occurred online. The indication is that this percentage will remain stable at 5% in 2017. The thin segment on the left of the chart above represents art and collectibles, where the bottom left quadrant represents the area for online sales for art at Christie's.

In 2016 this totaled \$67.1 million. Art and antiques represent 85% of Christie's sales. From the floor sales, \$149.9 million was made during a live auction place, where bidders joined the live auction by bidding with an online device. The 30% of online sales taking place through an online only setting resulted in \$67.1 million up over 80% in 2015. This was fueled in part by an increase in the number of online-only auctions hosted over the year to over 100 auctions.

CHRISTIE'S SALES 2017

Quadrant split



Maastricht University Graphic | Source: MACCH ART E-COMMERCE SURVEY 2017

Together both live and online sales were recorded to be \$217 million in 2016, and are forecasted by Christie's to be \$220 million for 2017. Christie's is also expecting a similar 5% increase in the number of individual art, antiques and collectibles expecting to sell online during 2017. This is forecast to be 20,000 objects up from 19,000 selling in 2016. By replacing Christie's South Kensington with a predominately online strategy Christie's may well move into the lower price-end of the market. They also report half of their sales to be below \$5,000. With 70% of their buyers from abroad, and the majority of buyers from the United States, the UK and then France, Christie's are reporting a dominance in Europe and The Americas over Asia for online sales.

These channels are supplementing existing sales channels, although in time the most efficient sales channels may require others to be pruned back. Just recently, the publicised closure of Christie's South Kensington, Auctionata going out of business in early 2017, and Paddle8's announced restructuring, indicate how the shape of this industry is still evolving. It is fiercely competitive and although some merger and acquisition activity has taken place, there is a lot of growth to be attained before real consolidation can occur.

Sotheby's has also aimed to broaden the reach of its global audience by expanding the range of technological applications used to engage bidders across a number of auction platforms. Across a variety of smart phone and tablet applications clients can live-stream auctions and bid online. Online appliances also enable potential bidders to view and experience audio tours of pre-auction exhibitions, as well as for customers to post analysis and review auction results. Sotheby's reported a 20% increase in online sales on the year. Sotheby's online sales, which they define as sales to online bidders during live auctions as well as online only auctions totaled \$155 million in 2016. This represents less than 4% of the \$4 billion sales from Sotheby's globally. During 2016 Sotheby's launched the timed format, offering 10 timed sales, which were online only, and 16 online auctions in total. This is set to double in 2017, which will provide a boost in online sales revenue for this year.

Phillips also run their own platform for live auction sales, of which 4% of sales occur online and through live sales. During 2016 Phillips reported \$20 million in online sales, and they forecast \$30 million for 2017. They have experienced growth of 50%, partly due to expanding the number of auctions held online, from 46 in 2015, to 48 in 2016, to the 54 planned sales in 2017. The substantial growth in revenue would appear to come from moving into higher end online sales. With a large 70% share of individual artworks selling online for over \$10,000, Phillips has the highest average price for online sales of the major auction houses surveyed.

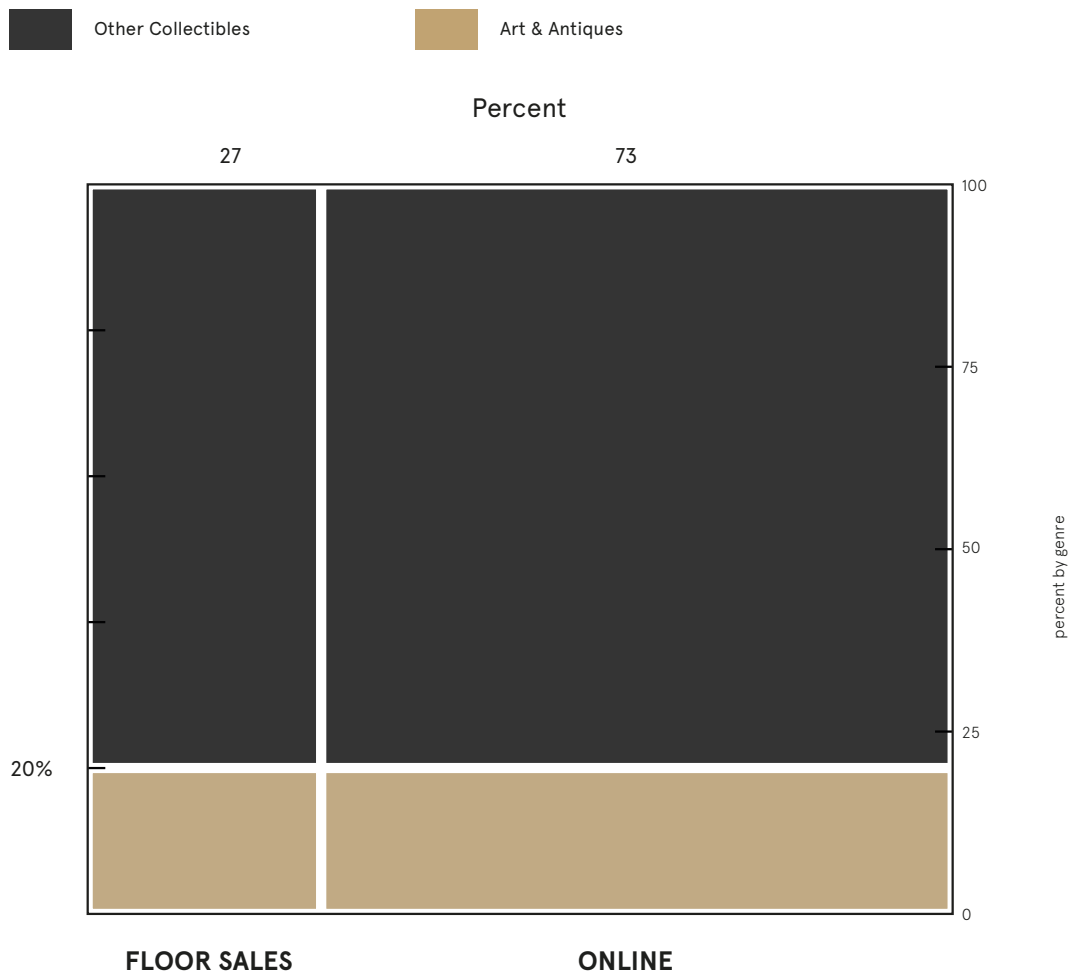
eBay live auctions, powered by Invaluable, represent just under \$14 million in sales. The announcement to join forces again with Sotheby's in 2015 for live auctions through Invaluable, with live streaming on eBay, is providing a player that is gradually encroaching into the online art market. With over 150 million active buyers globally this extends the reach of one company all over the world.

Heritage Auctions is a leading auction house in the world for collectibles and is one of the first and strongest auction houses to embrace online technology. They run many live auctions online, reporting to us that 73% of their sales are made online, and of those 100% are live. Having expanded their auctions in many other areas of collectibles, such as coins, sports memorabilia and comics, they have slowly and surely built up a wider range of higher quality mature categories, more frequently able to reach higher priced points. Heritage Auctions has emphasized the importance of providing transparent information and through recognized experts, to build trust. With only 20% sold as collectibles, the fraction of revenue that falls into the definition of art and antiques that we use, is much smaller. From the online sales in fine art, they routinely sell items above \$500,000 online. For example, recently selling a Willem de Kooning, a Helen Frankenthaler, and a Birger Sandzen at prices all above half a million dollars online. With approximately 300,000 items selling per year, Heritage Auctions is an important online auction house in the collectibles space.

Many auction houses have developed their own platforms to sell art, antiques and collectibles. There are thousands of auction houses that offer online sales globally. Rather than develop and maintain their own auction platforms, however, such auction houses can choose to use a branded marketplace which typically hosts a number of auctions from various houses.

HERITAGE AUCTIONS SALES 2017

Quadrant split



Maastricht University Graphic | Source: MACCH ART E-COMMERCE SURVEY 2017



TIMED AUCTIONS

When the whole auction process takes place over a longer period of time online, it is generally referred to as a timed auction. Online marketplaces use the timed format, with a virtual auctioneer opening the sale at a predetermined time, and the sale remaining open for a set period. To prevent sniping – defined as bidding towards the very end of the auction or at the last minute – some timed auction formats allow the end time to be extended, often conditional on a set time following the highest bid, to allow for further higher priced bids to be placed. Many platforms offer so-called popcorn bidding to avoid sniping. For example, TheSaleroom extends the timed auction by two minutes to enable further bids to take place, Invaluable allows bidding to be extended for up to an hour if bids are still arriving.

This structure is epitomised by the massive US online auction house eBay and the Chinese conglomerate Alibaba. Alibaba, also known as 1688.com generates billions of Renminbi using timed-auction marketplaces. Timed auctions are also offered by Artnet, ArtSpace, Artsy, Auction Mobility, Auction Network Sweden, Auction Technology Group, Auction.fr, Bidsquare, Catawiki, Drouot, iCollector, Interencheres, Invaluable, Lot-tissimo, Paddle8, and UKauctioneers. Many of which also offer branded platforms, which we will discuss in more detail in the following section.

Timed auctions can also end in a fixed price format of 'buy-now', which is common on eBay. eBay, therefore, offers a variety of live, timed and also buy-now fixed priced auction formats. Having expanded across many of the sales channels and formats, eBay is a source of serious competition in the future for many of these branded auction houses. The ability to include a (higher priced) 'buy-now' option during an online auction is further blurring the line between marketplaces and auction formats.

Auction houses may offer private sales through a fixed-price format, just as dealers and galleries may choose to use an auction marketplace to reach potential bidders. Dealers promote their artists on an auction marketplace, such as that previously offered by Paddle8. In essence, they were providing a dealer or gallery with a marketplace offering an auction format for sales rather than fixed bids. The success of this format will become apparent after Paddle8's restructuring.

BRANDED PLATFORM PROVIDERS

Auction houses (and to a lesser extent dealers and galleries) can also choose from a large variety of branded live auction platforms. These global marketplaces enable online bidders to participate in live auctions occurring at auction houses the world over.

There are a few dominant players in the branded auction marketplace for live auctions who facilitate the bidding process for art, antiques and collectibles, as well as many other types of goods, auctioned in real time. Bids are collected through these online platforms who function similarly to an auction house clerk, but act remotely, collecting electronic bids via a computer server and placing incremental bids in real-time during the live auction. They also provide the service of advertising auctions.

Invaluable hosts over 5,000 auction houses within their market place, of which two of the largest online auctioneers, Sotheby's Live and Phillips are part of their customer base. For example, Sotheby's Live (via sothebys.com) utilises bespoke core technology from Invaluable, a partnership set to continue into the future, as announced in April 2017.

Epai Live is the largest branded auction platform in the Asia-Pacific region, specializing in art and antique auctions, with over 1,200 auction houses using their platform. It is a multi-branch Central State-Owned Enterprise in China.

In France, Auction.fr has over 1,500 auction houses using their platform, which also belongs to the Invaluable stable. The Saleroom, is the branded platform for the Auction Technology Group, with over 600 auction houses. Similarly, over 300 auction houses pay a fee to put their catalogue on Lot-tissimo. With bids having no commission, these can be interesting options for auction houses to generate absentee bids. In the UK, UKauctioneers provide this model for 150 auction houses. In France, DrouotLive caters to 80 auction houses. Additionally EasyLiveAuction has 74 Irish and UK auction houses on their platform and Bidsquare represents 72.

In Germany, Denmark, Finland and the UK, 39 auction houses use Auction Network Sweden. With 70% of sales less than \$500 on its platform Auctionnet.com's growth has been strong in terms of sales revenue and the number of art, antiques and collectibles selling through their platform. iGavel is a smaller branded platform for 28 auction houses.

Artsy is moving into this space, and currently has around 25 auction houses under its branded platform for live auctions. Artspace is a branded platform for just seven auction houses. Paddle8 also represents a small number of auction houses for timed auctions and is broadening its offering more diversely towards a large number of cultural institutions and charities, but has not developed its platform for live bidding technology.

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Defining his landscapes with simple shapes and vibrant color, James Hartman invests his scenes of northern California with the spirit of 19th-century post-impressionists. The artist breaks down fields and coastlines into essential shapes that accentuate shadows and brightly lit areas. Our exclusive partnership with UGallery brings you one-of-a-kind works from the studios of emerging artists around the country.

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Meet Artist

James Hartman

James Hartman's work pays tribute to great Bay Area artists of the past, especially the Society of Six, a group of early 20th-century painters committed to painting outdoors and celebrating the landscape around San Francisco.

When not painting in the 1908 carriage house that serves as his studio, Hartman paints on location to capture the essence of the coastal California hills.

[See all James Hartman's artworks](#)

In this report we define a marketplace as an online e-commerce platform where the third-party acts as a 'virtual vendor' selling art, antiques and collectibles directly to consumers. Bringing together more buyers and sellers than would otherwise take place via the direct traditional sales channel of artists, galleries and dealers, and auction houses to buyers has the advantage of generating more sales revenue, and consequently higher fees and commissions.

Different business models exist in the e-commerce world, with a variety of cost structures. We have seen how marketplaces can broaden their audience by enlisting aggregators to receive additional exposure to their sales.

In a fixed-price setting, a straight commission is taken for the sale, which then goes to the provider itself. Examples of companies who use this structure are Saatchi Art, Amazon Art, and payment processors for credit card payments, and for example, PayPal.

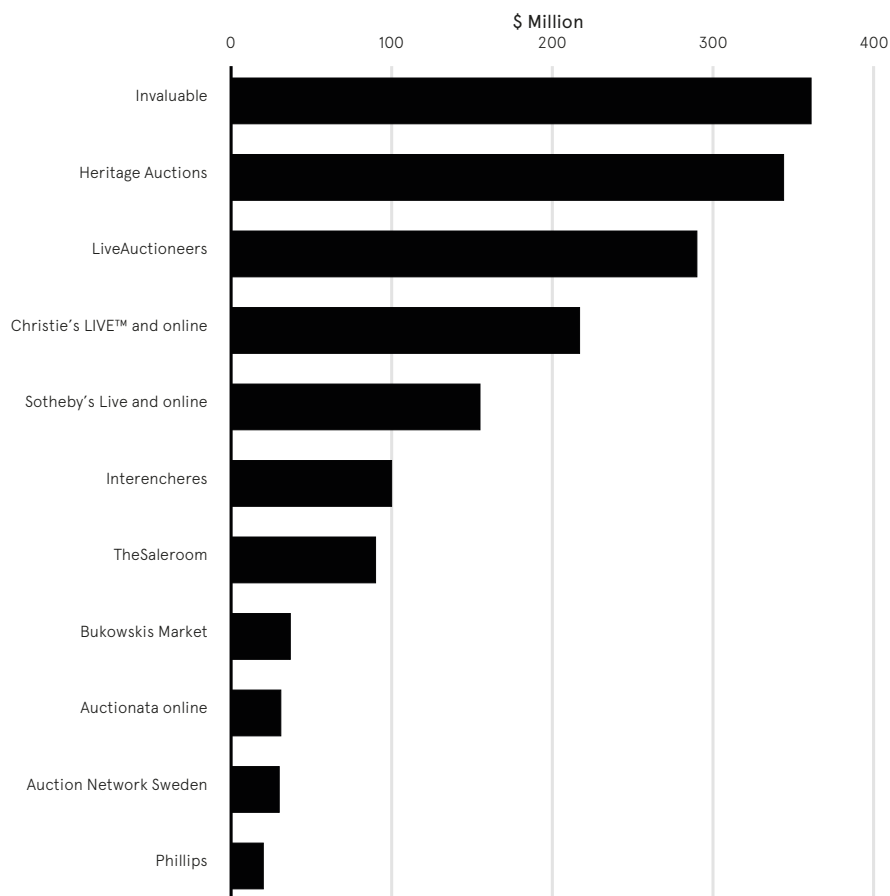
The largest auction houses typically generate their revenue from a fixed (albeit decreasing) percentage of the hammer price. The auctioneer works in the interests of the seller. Similarly, online auction houses benefit from higher sales prices, when fees are based on commission as a fixed percentage of the sales price.

When a sale takes place (check-out) in the online marketplace, that has been redirected by an aggregator, a cut of the sale price is taken by the aggregator as a service for providing the function of hosting or redirecting sales through a form. We provide the top auction platforms in both 2015 and 2016 using end of year revenue. Bearing in mind that 73% of Heritage Auctions sales are made online they generate the largest number of online sales for a single auction house. When using this report's definition of art, antiques and collectibles, however, the auction house with the largest revenue is Christie's. Invaluable has moved ahead of Heritage Auctions and just behind Christie's and Sotheby's with 50% of sales in art, antiques and collectibles. As an aggregator, it became the largest player in 2016, alongside Auction Technology Group, who were unable to provide their exact sales figures.

We have also separately shown sales for the next tier of art e-commerce auction platforms, with sales below \$15 million.

ART E-COMMERCE

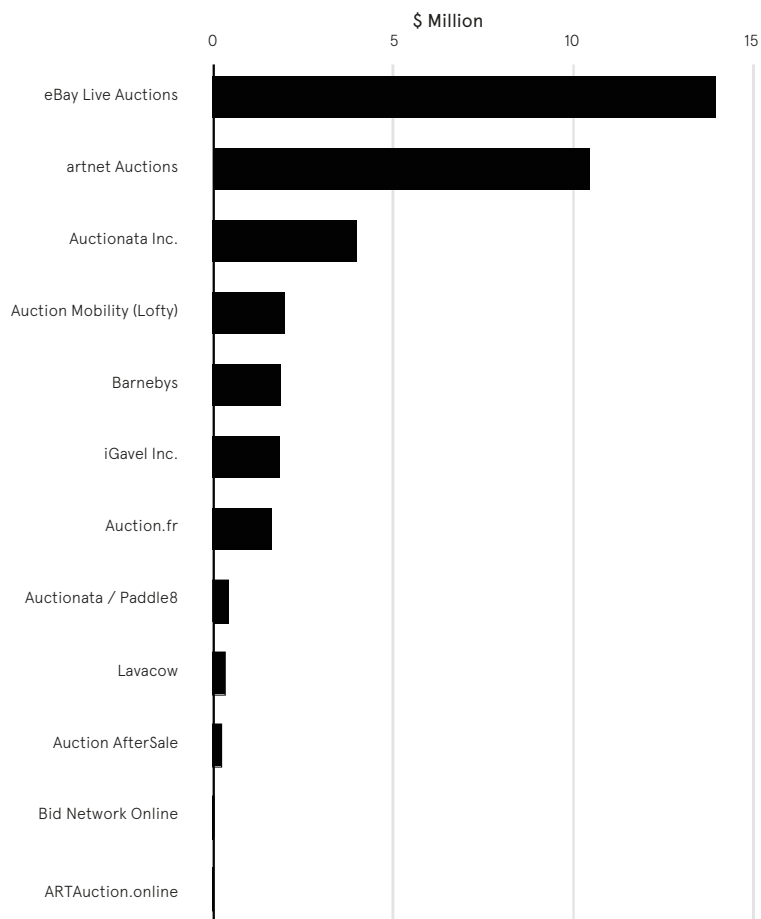
Auction platforms (above \$15 million) in 2016



Source: Maastricht University Graphic | Source: art e-commerce survey 2017 & The Hiscox online Art Trade Report 2017

ART E-COMMERCE

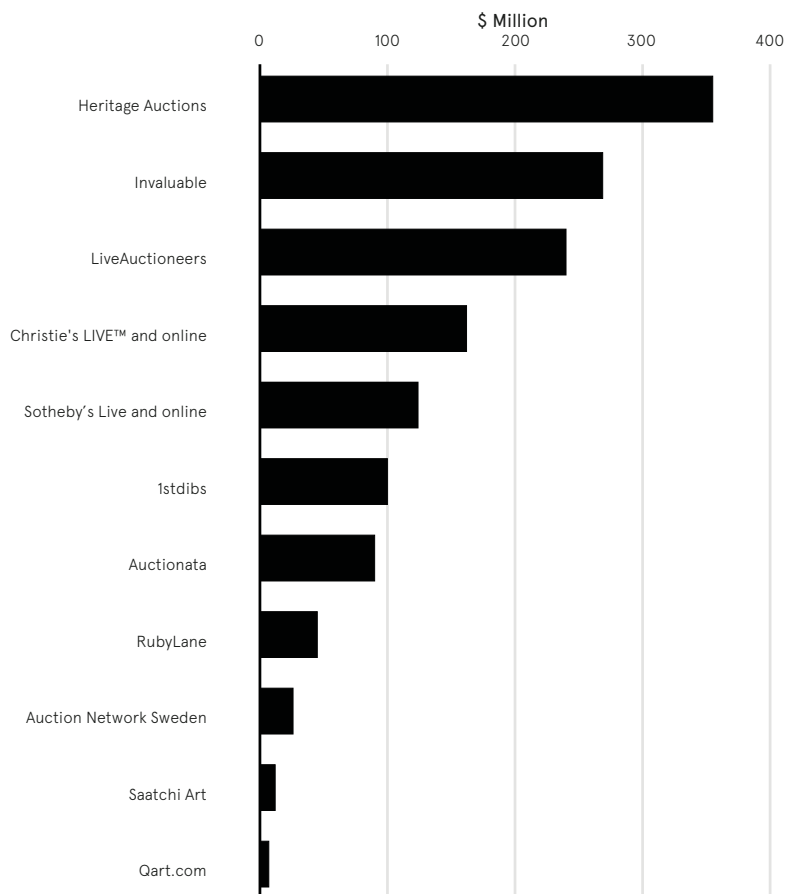
Auction platforms (below \$15 million) in 2016



Source: Maastricht University Graphic | Source:art e-commerce survey 2017

ART E-COMMERCE

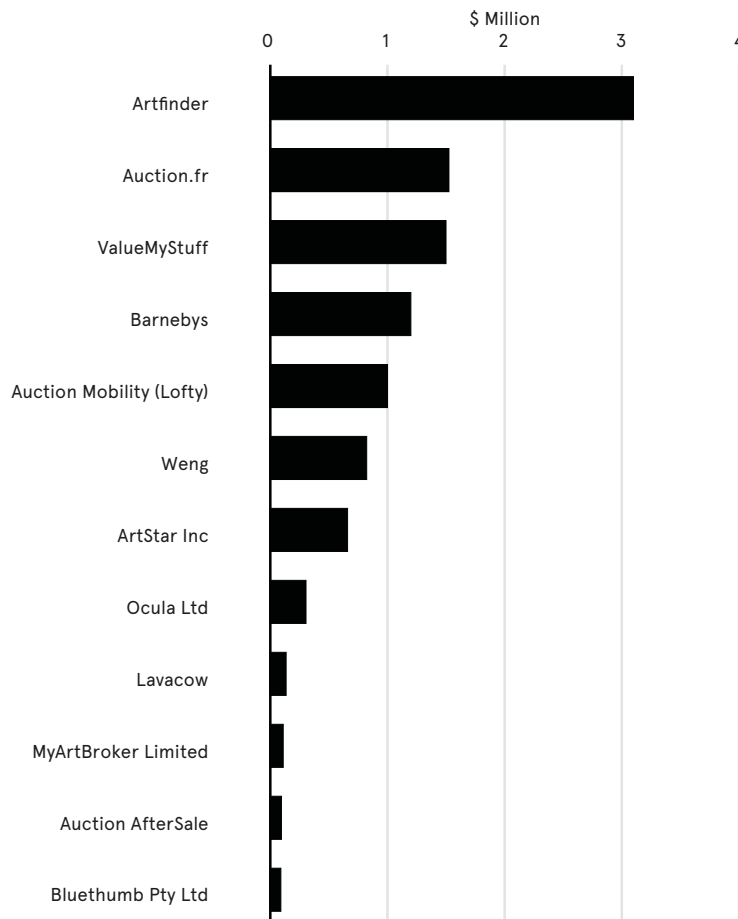
Top sales platforms (above \$5 million) in 2015



Maastricht University Graphic Source: art e-commerce survey 2017 & The Hiscox online Art Trade Report 2017

ART E-COMMERCE

Top sales platforms (below \$5 million) in 2015



Maastricht University Graphic Source:art e-commerce survey 2017

INTERMEDIARY SERVICES & SUPPORT FOR ART, ANTIQUES & COLLECTIBLES

INTERMEDIARY SERVICES & SUPPORT

Within the online art space, there is also a wide variety of further intermediary services on offer. In this section we briefly put a few into context which relate to the online art business. The list is not exhaustive, but sheds some light on how the wider architecture of the art world is integrated and interdependent.

Many of the supporting services available online and through digital channels involve the provision of additional data and information to art market participants. Market transparency, for example, has increased vastly through the provision of price information from companies such as Artprice and artnet; their editorial divisions have also seen enormous growth, providing detailed analysis rather than just raw data.

Auction houses provide information on provenance in extensive and detailed catalogues. Other types of services also help bring transparency to the market, including listing companies, which redirect potential buyers to auction houses, providing information through directories of upcoming auctions.

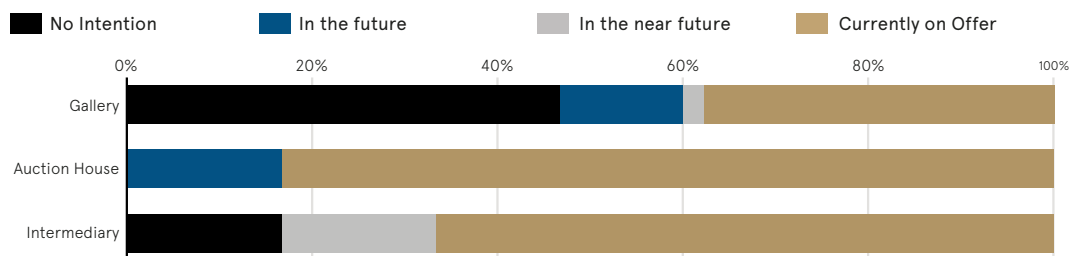
The art world is reaching a broader market through social media, which is contributing to the spread of information online, helping to reach potential new clients, communicating with existing clients, and maintaining networks and relationships.

The efficacy of many other intermediaries in providing a number of important functions, servicing, and supporting the market is broadening the art market. E-commerce can thrive through technological developments. Software providers are playing a leading role in this. Regulation will no doubt be necessary as these players become the giants of managing data, which needs to be held with integrity.

Advances move hand in hand with the social context, and a careful balance between aspects of self-regulation and imposed regulation ensures that growth is efficient, fair and ultimately sustainable.

ADVISORY SERVICES

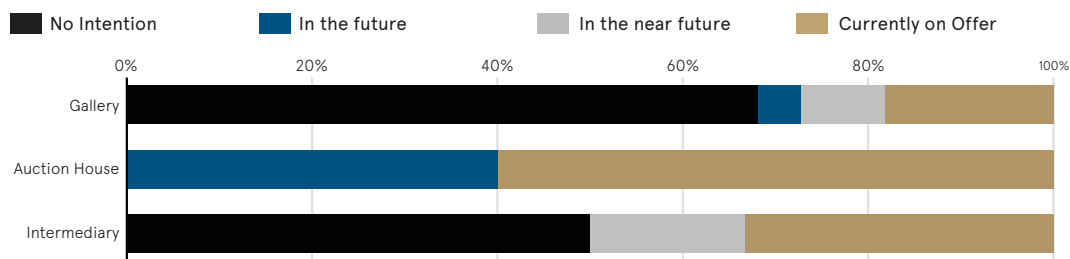
Plans to offer by sales branch



Maastricht University Graphic | Source: MACCH Art e-commerce Survey 2017

SPECIAL RETURN POLICIES

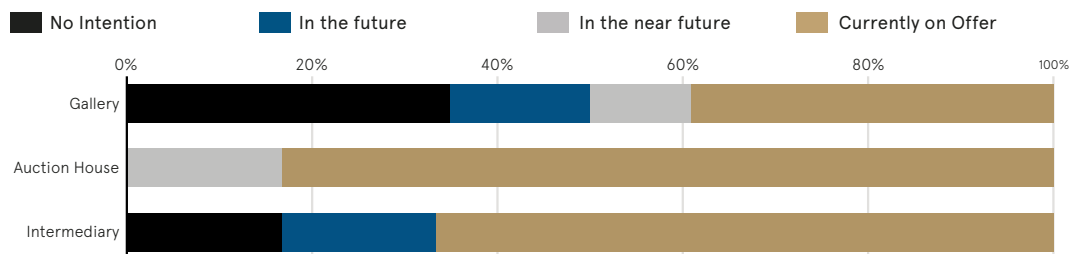
Plans to offer by sales branch



Maastricht University Graphic | Source: MACCH Art e-commerce Survey 2017

AUGMENTED REALITY TOOLS

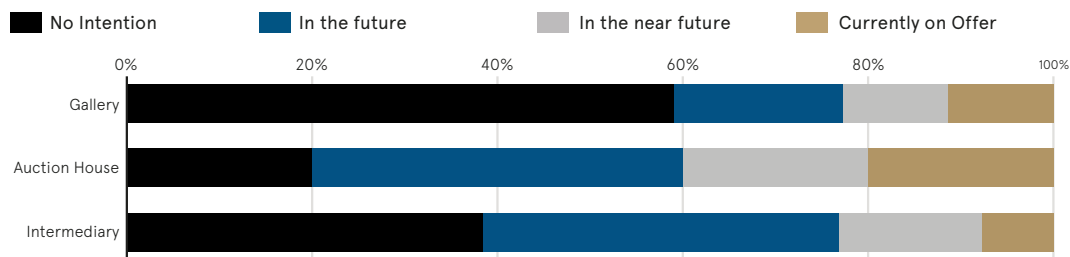
Plans to offer by sales branch



Maastricht University Graphic | Source: MACCH Art e-commerce Survey 2017

INFORMATION ON THE ART MARKET

Plans to offer by sales branch



Maastricht University Graphic | Source: MACCH Art e-commerce Survey 2017



SOFTWARE PROVIDERS

Software companies are providing services typically for existing auction houses to host online auctions. Extending their reach to dealers and galleries, with products and software to help small businesses manage their inventories, and also reach a larger number of potential buyers.

In addition to the branded auction platforms that have been discussed above, auction houses can choose a supporting system designed to meet their own needs. So called 'white label' platforms are available for auction houses to host their own live auctions. There are at least twenty white label platforms that provide online live auction software in the market today.

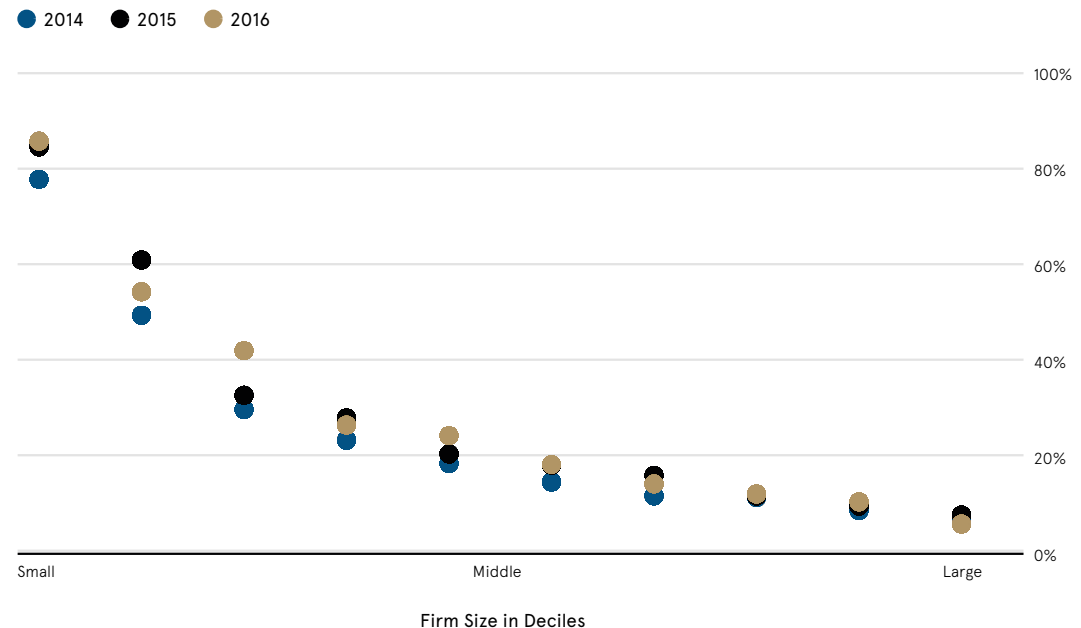
Invaluable and Auction Technology Group are the largest among a number of competing companies providing white label software for auction houses. The auction house can enable live bidding under the auction house's own brand name. In the art, antique, and collectibles space these three aggregators enable auction houses to maintain their own branding, and to run sales through their platforms. Many of the others serve auction houses in other industries, predominately in the industrial arena. Their technology can of course be used to auction a wide variety of objects and is not domain specific. Some cater exclusively to timed-auction formats and others more to live auctions, such as iCollector.

In terms of the numbers of auction houses, who are powered by these aggregator marketplaces, Invaluable currently dominates in terms of the number of auction houses and the number of auctions taking place annually with over 5,000 auction houses in total, and expecting to host 17,500 auctions in 2017. Several hundred auction houses utilize their white label product, Sotheby's being the largest. Auction Technology Group provides white label solutions for some auction houses, and via The Salesroom represents over 600 auction houses in the UK. Auction Mobility does not offer live bidding on their site, but currently serves 300 auction houses with their branded white-label bidding software, having doubled in size and sales from 2015 to 2016, with revenue expected to double again in 2017, helped by their acquisition of Lofty.com. Acquisitions of these larger companies are taking over smaller and younger competitors. Similar to Facebook's acquisition of social media platforms Instagram and WhatsApp.

As a partner of TEFAF, Invaluable allowed us to access data on its sales results over the past three years. We found that of the 3,325 auction houses and galleries, for which Invaluable provides live bidding technology, the fraction of online sales is highest for smallest companies. Over 80% of their revenue occurs through online sales. Interestingly, the smallest third of the companies have had the largest growth over the last two years.

Obviously the larger companies, which have already reaped economies of scale, cannot maintain such high levels of growth. Their growth is less, although still positive.

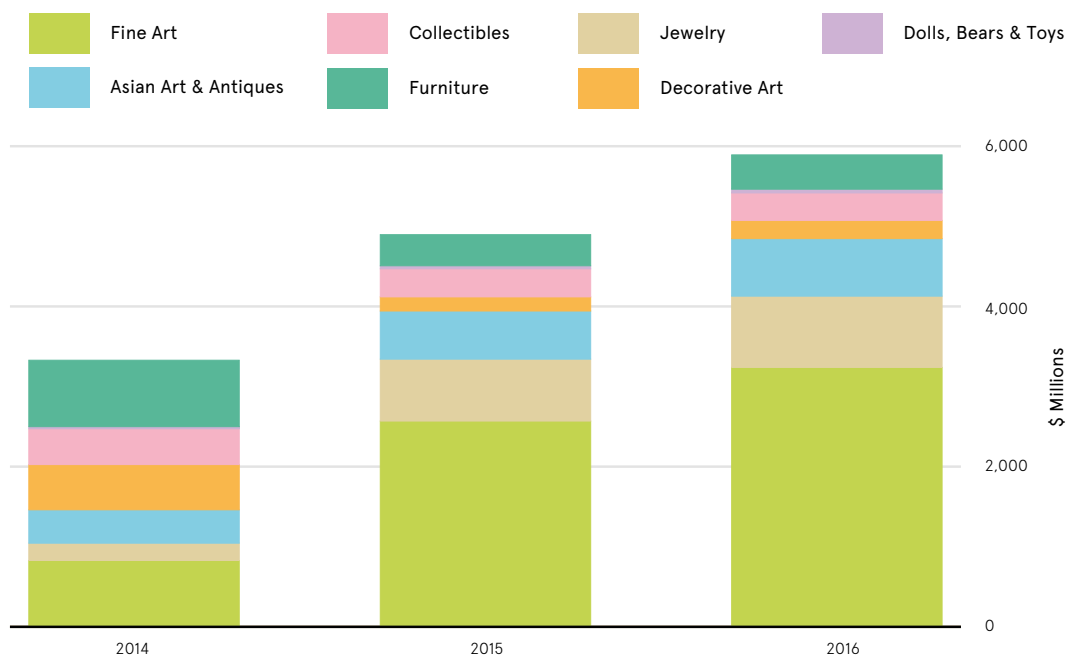
ONLINE SALES % of total sales



We have aggregated data from Invaluable on over 8 million lots sold on the floor and online over three years, to provide totals across a number of auction houses and galleries worldwide. Although data are only available on the aggregate level for both online and offline, this offers an interesting breakdown across the art and antique categories. In 2016 Invaluable sold nearly \$6 billion of art and antiques, which they have categorised as follows: Fine Art, Asian Art & Antiques, Collectibles, Furniture, Jewelry, Decorative Art, Dolls, Bears & Toys. Categories that have been excluded total roughly another \$4 billion in sales. It is interesting here to see that despite the 18.8% fall in auction sales in the US, Invaluable has expanded its sales, with fine art sales representing the largest increase and also percentage of the art, antique and collectibles space.

INVALUABLE

Art, Antique, & Collectibles



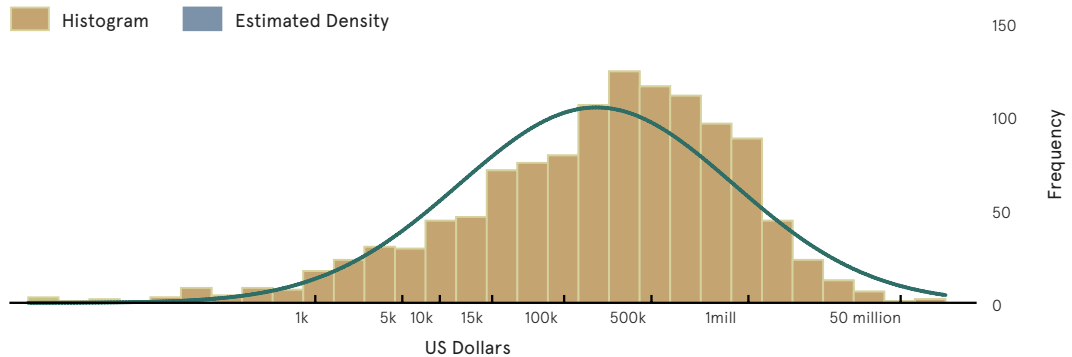
Maastricht University Graphic | Source: Invaluable.com

From sales that are run through Invaluable, we have a clear distinction between the number of sales that occur online only. The majority of houses in this sample (2,226 houses), 284 in the UK, 166 in France, 89 in Germany, 47 in Belgium, and 42 in the Netherlands.

First taking the full sample of 3,349 houses that run sales on Invaluable, we can see how hammer prices are distributed. We find that the average sales price for this sample is almost \$500,000, with the majority of sales occurring between half a million and a million US dollars. This sample is not limited to sales of art and antiques, since a variety of objects are sold through these auction houses under different collecting categories. The report is interested to see what fraction of total sales are sold online, and how this is changing over time.

ANNUAL SALES 2016

Auction houses



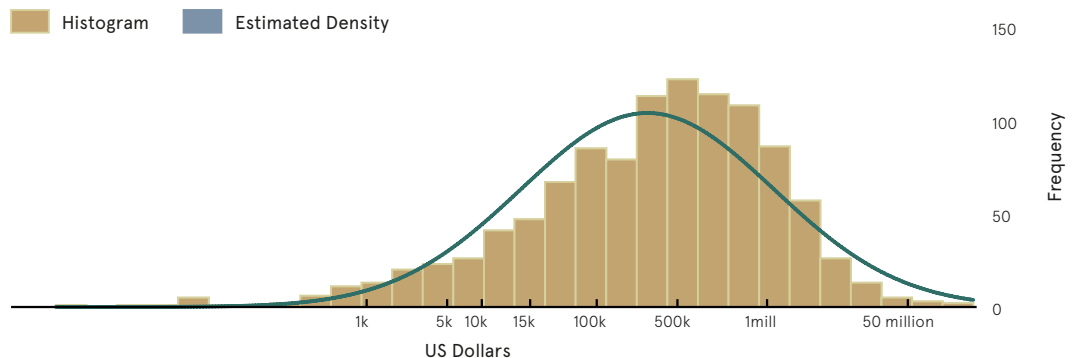
Maastricht University Graphic | Source: Invaluable.com

Higher valued items sell on the floor. Specifically looking at the objects that sold on the floor, the distribution does not differ too much from the total sales. The median is half a million with the majority of sales occurring between half a million dollars and a million. A few objects sell for over a million. Since the sample is for white label houses, the smaller auction houses, who use a branded platform, are not included. The data here are hammer prices and therefore please note, do not include buyers' premiums.

When looking at the distribution of online sales occurring for all 3,349 auctions and galleries, we find there have been a very few sales above half a million. The majority occur between \$2,500 and \$250,000 US dollars. The average in 2016 was \$150,000, slightly down from \$154,000 in 2015.

ONLINE SALES 2016

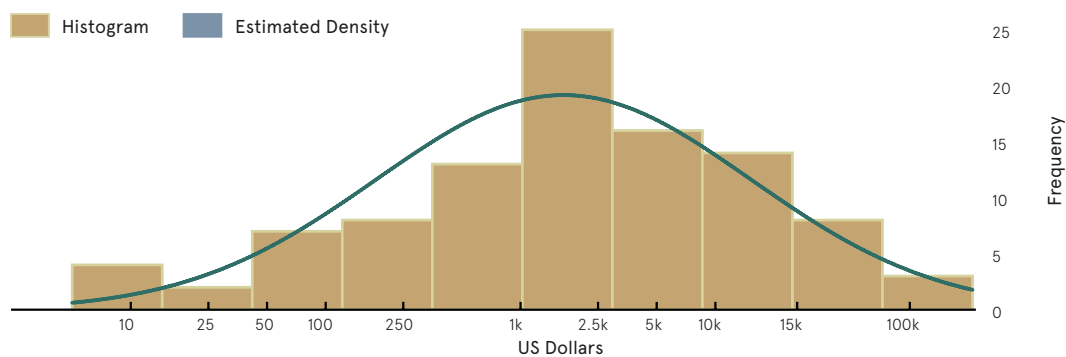
Auction houses



Maastricht University Graphic | Source: Invaluable.com

For those auction houses and galleries that only deal online, the picture is very different. The segment of the market is at the very low end, with prices less than \$100,000. The average sale price is around \$2,000.

ONLINE ONLY SALES 2016 Auction houses



Maastricht University Graphic | Source: Invaluable.com



DECENTRALISED DIGITALISED DEALS

Digital currencies, such as Bitcoin are playing a significant role in the digital world, but even more interesting is the technology behind it, called blockchain. Many argue this technology will revolutionise the economy, with huge benefits to diverse types of authenticating records from land registry, birth and healthcare records, identity management systems and even elections. Financial institutions are already heavily involved in researching the possibilities of blockchain. Blockchain technology is a step towards providing a transparent, efficient and trustworthy method to help manage financial transactions, contracts, and regulatory compliance. In our survey we found that three of four auction houses, and one in three intermediaries, intend to offer block chain technology within the next five years. Twenty percent of galleries intend to offer the technology with 3% already offering the technology. This provides an additional tool to their own expertise and augments a traditional provenance with a digital provenance.

How does block chain work and what can it do? The underlying principal of the technology is that its users can execute online transactions without the need of an intermediary to verify these transactions. In the financial industry these intermediaries are banks that function to ensure trust and certainty when transferring money. For digital transactions, the imperative for trust and certainty becomes greater, as no physical object is exchanged. Important tasks for banks are authentication and record keeping, which the blockchain can do, circumventing the need for intermediaries.

The blockchain essentially is a large decentralized database or ledger of digital transactions, verified and accessed by any of its users at all times. The figure describes in a simplified way how transactions are validated through the blockchain. For example, two parties, A and B engage in a digital transaction. This transaction is bundled with other transactions happening over a certain time period, say 10 minutes. This bundle of transactions is sent out to the entire network in an encrypted block. Some users in the network try to cryptographically generate (otherwise known as decrypting or mining) the block, in order to validate the transactions in it. The first miner to solve the encryption is rewarded (in the form of Bitcoin). The now validated block of transactions is timestamped and added to the blockchain in a linear chronological order. The chain is continuously updated on all users' databases. The decentralized character of the chain ensures its security against hackers. It is no longer sufficient to hack one single database. Because the database is decentralized, the hacker would need to hack into all the databases in the network. Although there will no doubt be security flaws and it is early days with this technology. The result is that all users in the network can see who owns what at all times and nothing from the blockchain can be deleted or removed without leaving a digital trail.

Registering a work into an inviolable database, complete with specifications, provenance and authentication licenses, provides a method for which artworks can always be authenticated and verified. Anyone in the network could check where it is (or where it should be) at any time. Start-up Verisart, founded by former CEO of Saatchi Online and S[edition] Robert Norton, and ArtPrice, are both working on such a database, where Verisart uses the public Bitcoin blockchain and ArtPrice is building their own private one. Blockchains provide the building blocks for a transparent, efficient and trusted auditable system, and ultimately empowering artists.

Artory, a company co-founded and led by the former head of Private Sales at Sotheby's, Nanne Decking, goes even further in providing security. They combine blockchain technology with other encryption-based data management systems, used by banks. Their aim is to provide a high-level security of standardised information and record management systems of art transactions. Ultimately, all these companies have a similar goal - to improve transparency and efficiency the art world.

For creators of digital art, the benefits are the most obvious. Artists' intellectual property can be protected when their artworks are registered, as for example through Ascribe, where artists can access off-the-shelf contracts to protect their works. Registration of artworks authenticate the work in such a way that the information is added to the blockchain. Not only does this help the artists prove the work is theirs, it also enables digital work to be scarce, a quality needed for an artwork to retain value. The work can only be used, displayed or seen by its current owner. Ascribe offers a service which crawls the web for similar images to the artworks registered in their system. If they find an exact match the artist is notified, making it easier to claim copyright and demand payment. Similar start-ups include Binded (formerly Blockai) which uses the Bitcoin blockchain to protect photographers' copyright, and Monegraph extends its customer base to digital media in general.

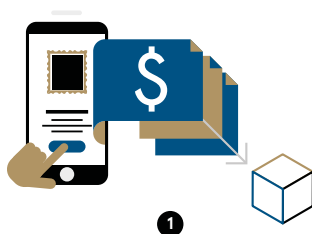
Implementing blockchain for art-related issues is not being immediately embraced by everyone. This originates from the conservatism in the art world. As confirmed in this report and others, the online world is still viewed with great suspicion. Secondly, some critics say that provenance and verification are not that much of an issue. The limited size of the art market means that current systems are sufficient and a digital ledger is unnecessary. Large scandals concerning issues surrounding authenticity and verification, however, are prevalent. This report raises the issue of how art e-commerce is being limited by the intertwined nature of trust and transparency, which can in part be overcome through the shared and trusted digitalisation of art sales records.

Blockchain Technology in the Art World

Decentralised digitalised deals:

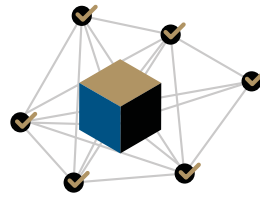
- Help artists by facilitating resale rights
- Help dealers and auction houses establish ownership and authenticity
- Help fight against fraud and the black market
- Help in the battle against tax evasion and moving art offshore

HOW IT WORKS



1

Digital transaction is made. This transaction is bundled with other transactions carried out in the last 10 minutes. These form a cryptographically generated block.



2

The block is sent out to the entire network. Miners try to decrypt the block and validate the transactions.



3

The first one to decrypt the block receives an award (bitcoin).



4

The validated block is time-stamped and added to a chain in a linear chronological order.



5

It is continuously updated so it is the same throughout the network.



6

Each member in the network can see who owns what at any time.

3/4

auction houses

1/3

intermediaries

1/5

galleries

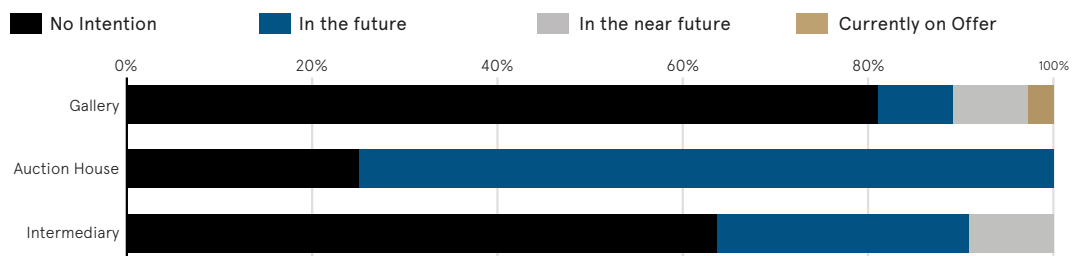
...intend to offer block chain technology within the next five years.

3%

OF GALLERIES
ALREADY DO

BLOCK CHAIN TECHNOLOGY

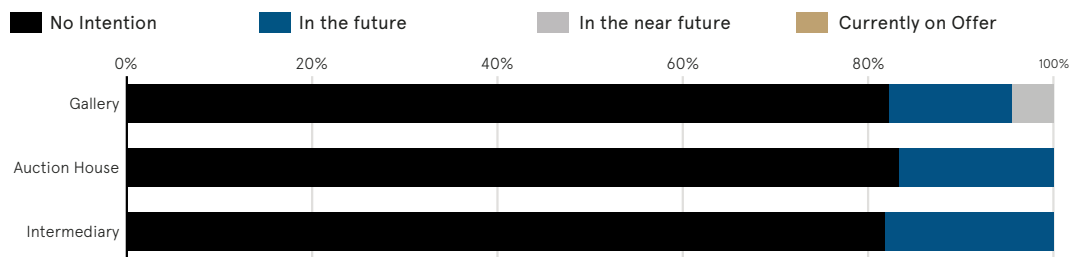
Plans to offer by sales branch



Maastricht University Graphic | Source: MACCH Art e-commerce Survey 2017

PAYMENT IN VIRTUAL CURRENCY

Plans to offer by sales branch



Maastricht University Graphic | Source: MACCH Art e-commerce Survey 2017

BLOCK-CHAIN TECHNOLOGY WILL CONTRIBUTE TO TRANSPARENCY WITHIN TRANSACTION HISTORY, WHICH IN TURN COULD FOSTER TRUST. THREE OUT OF FOUR AUCTION HOUSES AND ONE IN THREE INTERMEDIARIES ARE KEEN TO OFFER BLOCK-CHAIN TECHNOLOGY WITHIN THE NEXT FIVE YEARS. THERE IS MUCH LESS INTEREST IN VIRTUAL CURRENCIES, SUCH AS BITCOIN



SUPPORT SERVICES

A second theme of providing support to e-commerce in the art market is through information and advertising. We focus on how business models, from Artsy to Barnebys, exemplify how such companies are providing a supportive role in the art market.

Artsy predominately provides a marketing platform for galleries, doubling in the number of galleries represented on the platform during 2016, despite the inevitable churn of galleries that fail and close down. Currently, with over 1,700 gallery partners, it has an extensive gallery network, larger in number than the 1,400 galleries that artnet represents. Artsy's business model is not to provide end- to-end commercial activity, as artnet does, but to provide a platform to bring all sources and types of art together, from artists, to museums and galleries, to film production. On the other hand, artnet has a much larger base of auction houses and artists, currently over 300,000. Information provision is an important element of both companies. Artnet provides auction price data as well as news, and Artsy focuses on editorial as well as listing services for galleries.

Promoting a collaborative approach as an all-inclusive partnership based model, Artsy, does not claim to be a disruptive platform in the art world, but positions itself as an all-encompassing supporting platform. Currently funded through sponsorship from commercial partners such as Gucci and UBS, Artsy has the qualities of luxury branding. Having started with support from some of the most formidable galleries and auction houses, Artsy's model is to signal high-end quality, where other galleries can buy-in to the value adding services that Artsy offers in the marketplace. Artsy provides a curated service for buyers and collectors by providing a multi-level tiered assessment of galleries.

The business model is therefore also different, with no revenue generated through direct sales. Galleries pay a monthly fee to be present on the platform and receive the value-adding services. Similar to the physical appeal of an art fair, the virtual space provides a platform for galleries to market and advertise themselves and reach consumers. How profitable is the model? As long as galleries are willing to pay the monthly fee, in the range of a third of the price of a top-tier art fair paid per annum, then galleries will no doubt maintain their membership or affiliation. Sales need not transact online, as long as enough sales interest is generated through the website to justify the monthly payments. There is a tiered membership system, which dictates cost and services supplied. Success is hard to measure. As with intangible goods and services, such as advertising, it is not always clear that viewings online, through platforms such as Artsy, or social media platforms such as Instagram, necessarily lead buyers to transact.

Membership is not for everyone. On average, eighty to ninety galleries enroll per month, with some being turned down not meeting the curatorial requirements of the platform. Growth will continue as long as galleries see the value of advertising through the platform.

To move to a profitable position, the business model began moving away from advertising alone towards auction listing when in June 2016, Artsy started to list auctions on their website. Similar strategies occurred when Alibaba, the Chinese e-commerce marketplace grew from a free market to become a company with an extremely healthy bottom line. Moving to more mainstream activities to generate revenue, including partnerships with the larger auction houses, such as Phillips, Heritage Auctions and more recently Christie's, is becoming more common across the art e-commerce sector. The leading and largest auction houses are effectively outsourcing their marketing reach via many intermediary platforms with listing service providers.

Barnebys is another business case of providing intermediary search services to 230 galleries and 1,700 auction houses generating revenue growth of almost 60% during 2015, and forecasting even higher growth during 2017, through a business model that generates revenue on a cost per click basis. Barnebys is indicating that it will introduce block chain technology within the year. Barnebys business model provides a supporting function of the traditional vendors in the art market, building upon the importance of maintaining sales through reputable and branded auction houses and galleries in the marketplace. By urging auction houses to market themselves alongside each other (as they tend to in the advertising pages of the numerous art magazines), the philosophy is that if collectors are able to view the whole range of art and antiques for sale, then collectively there will be an increase in the demand for the full spectrum of virtual vendors, auction houses and galleries alike. Potential bidders and buyers are redirected to bid now, and buy now online platforms, hosted internally by auction houses and galleries themselves, or to branded platforms provided by external software providers. The approach is to maintain brand quality and reputation, which provide synergies, adds value, and supports those with a physical location as well as an online presence.

The vision for a culture which enjoys sustainable consumption and a long term view suits the market for art and antiques. The compatibility of artworks with a value that is related to longevity, heritage, and to cultural values, renders the market for art and antiques as unique and exceptional when compared to other kind of markets, where value often becomes obsolete over time. The sustainable aspect of artworks is attractive to the attitudes of a younger generation, raised in the sharing economy.

As millennials become more affluent, then e-commerce for art and antiques at the higher price range is set to take off. Older Swedes, coming from a country that was an early adopter of the internet and therefore more used to e-commerce, with greater exposure and experience of the market are proving this to be the case.

Globally growth in e-commerce is driven by the younger generation. As the larger auction houses enlist more and more partners with platforms to obtain greater outreach, the market may become oversaturated and margins become thinner. Partnering with attractively designed websites with technologically crisp design is important for auction houses to ensure that their quality and brand is not compromised. If sales do not occur directly through these platforms, then branding and reputation become key. Both Artsy, initially an advertising platform for galleries and dealers to reach a broader audience, and Barnebys who introduced worldwide auctions to a broader public, are moving into both dealer and auction sales channels. They are both expanding their reach, currently with widely different business models. Each focuses on branding, advertising and marketing services to obtain a greater outreach, but moving into each other's space.

Strategic choices may have to be made by the largest auction houses not to sacrifice their core brands by allowing too broad a range of listing platforms to be involved, thus diluting their branding in the eyes of consumers. We may yet see the best of these intermediary platforms merging, or being acquired by the largest auction houses. The winners will be those who provide the highest conversion rates and the most returning bidders. It is a hugely competitive marketplace, and only those who are able to provide the magic formula to emulate the success elsewhere in the online business world, will survive. It is a competition many founders and funders of innovative technology companies are willing to take part in given the upside where opportunities exist, even if such a magic formula is hard to find.

Sales volume for online sales is far greater at the lower end of the price range of artworks, antiques and collectibles. It remains a challenge to encourage online sales at the high-end of the market, where commissions per transaction are higher.

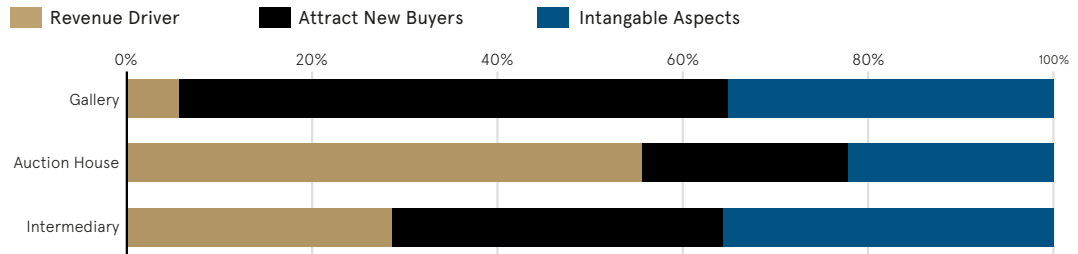
With reputation and quality being so fundamental in the upward drive for growth, many online art businesses are still aspiring to conquer the high-end of the market.

The power that auction houses have is that they are established brands that have built up an acknowledged reputation and skill-base.

When asked about their motivation to move online, the auction houses said they were driven to generate more revenue. After a decline in auction sales during 2016, this may play an even more prominent role than previously.

MOTIVATION FOR ART E-COMMERCE

By sales branch

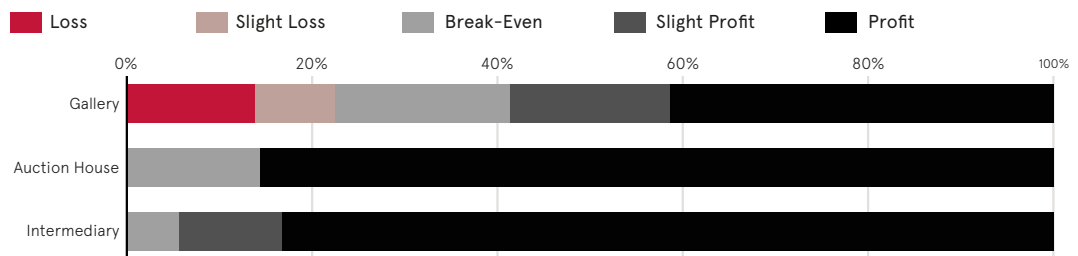


Maastricht University Graphic | Source: MACCH Art e-commerce Survey 2017

A common sentiment of many players across the art e-commerce sector is to aspire to the high-end sales. However, the current growth and profits in the art e-commerce are to be seen at the lower end of the market where there is much higher volume, although the prestige and the high rates of commission are of course at the top end of the market. Auction houses are naturally seeing growth as they host more online and live auctions during 2017 than over 2016. It is the gallery sector that experiences less business activity and turnover, with 20% recording losses for 2016, and only 60% turning a profit. For dealers whose top concern is acquiring new clients, the move online is a logical step forward.

ART E-COMMERCE TURNOVER

By sales branch



Maastricht University Graphic | Source: MACCH Art e-commerce Survey 2017



SOCIAL NETWORKS

In the experience economy, personal and shared experiences are often becoming more important aspects than ownership. Projecting identity through shared experiences (a phenomenon accelerating through social media) is a concept which is changing how our economy functions. It changes how consumers acquire information, how marketers reach their consumers, and how artists, galleries and auction houses sell their art, antiques and collectibles.

Social media websites and platforms are in part able to fulfil some of the functions that gallerists do, working in collaboration with artists. Artists can boost their own careers by presenting their work directly on social media sites. They advertise through social media, such as Facebook and Instagram. Claims have been made that art dealers sell million dollar works through social media. Instagram is currently seen as the most popular platform for advertising. Sales can occur through “call directly” options, which effectively redirect interested buyers to links to artists’ direct personal websites, or to an online marketplace.

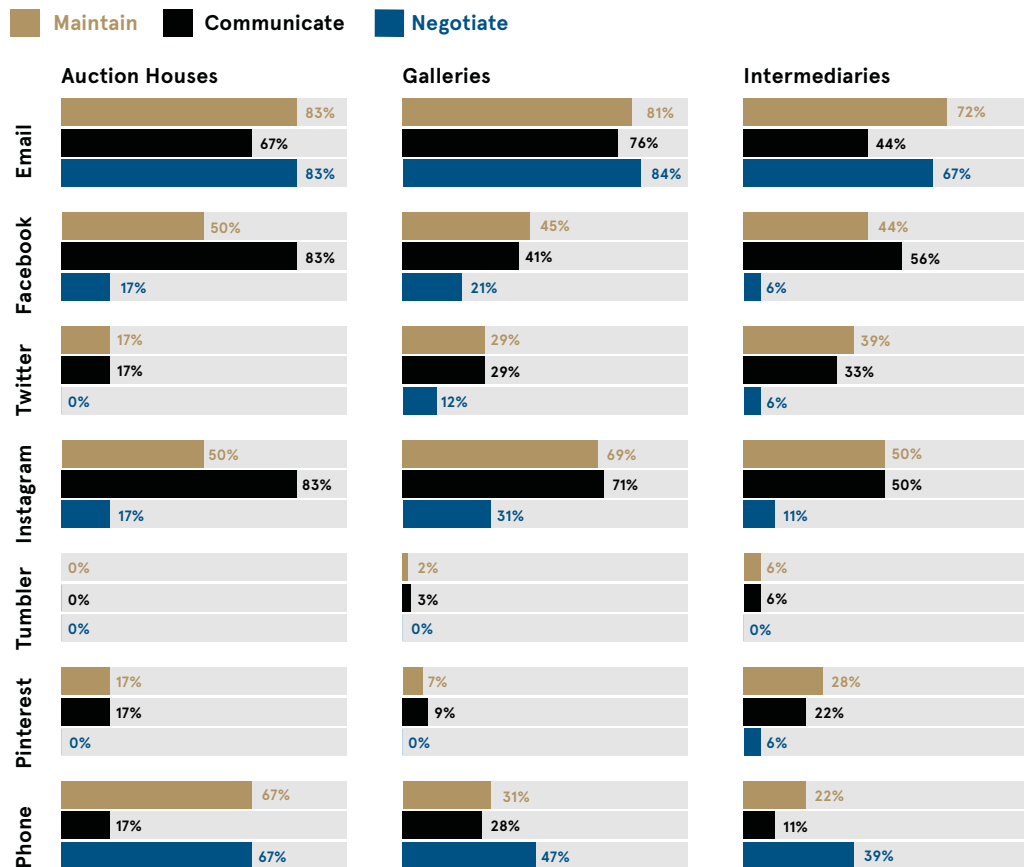
Social media is strengthening the foundations through which online sales are being made. Sales are underpinned by the use of social media, sightings on Instagram, and the attractiveness of websites and online information. We can consider Instagram and social media as an important backdrop of how art and e-commerce functions and how sales are promoted.

Just as Instagram and Snapchat are visual mediums that care about what you are doing as well as what you are wearing, traditional retailers are adapting to shifting life-styles and tastes. How should traditional brands adapt? What does this mean for artists and gallerists moving online? The role of branding is shifting from someone communicating their identity towards a role of creating and facilitating trust. For artists and gallerists alike to sell online they put their branding behind the trust in the platform. Social media creates online trust and empowers e-commerce. Hence the importance of feedback mechanisms. The ability to post experiences and provide ratings scores to enhance reputation is what feeds trust.

Reputable galleries and auction houses that have already created brand awareness and reputation put their brand behind the artists and artworks that they represent. Their curatorial skills provide a trusted platform with which consumers and collectors can buy online. High-end contemporary galleries are examples of highly curated platforms where the branding provides the ultimate endorsement of quality and generates trust. As art fairs provide an endorsement of quality through their selection and vetting process, they add value to the items on offer, reducing the risk to the buyer and increasing trust between buyer and seller. Here the art fair’s reputation and

independent selection process creates trust through its brand. This type of branding can be provided online through an e-commerce platform for dealers from a particular group, belonging to an association or art fair.

Art Sales Channels: Share Using Social Media, by Function



MACCH Dealers Survey 2017

Reviewing the art online in the art world in 2017 reveals a number of important elements which provide an additional depth to understanding the functioning of the world art market. Sales through online platforms have soared in number, with growth centered around low price points. Despite auction sales being down during 2016, overall figures for online auction sales have risen.

As the online market for art begins to mature, market share for small auction houses and galleries dealing in art, antiques and collectibles is still growing, whilst for larger houses it has stabilised. The art world has not (as of yet) been affected by the same level of disruption from the online space as in many other industries.

Small houses are benefitting from online sales to reach a larger audience, and with lower priced objects, the demand from a larger outreach provides a positive model for growth. For larger auction houses, with a smaller share at the lower end of the price range, there is a trade-off: higher turnover by moving more online, at a subsequent loss in overall quality of artworks moving through the auction house. A natural threshold exists when selling lower quality objects online and maintaining reputation for high-end sales. Artworks, similar to real estate and other objects with an intangible nature, need human intervention.

Online sales channels function well for low priced artworks, where speed and immediacy are key. For more valuable artworks, antiques and collectibles, the technological advance that other industries have experienced through online sales has not been as far reaching as many investors into e-commerce businesses in the art world had hoped. Information requires expert advice and a foundation of trust, so until human interaction between artwork and buyer can be mimicked perfectly in a virtual environment, growth at the high-end of the market for art online will be limited.

The important role of online trade in the art world is in providing an increased range of services which can be of value to consumers: this includes information, timely advice, marketing, and advertising – which together underpin the current architecture of art markets. Social media, as well as art fairs provide opportunities for dealers to build brand awareness, signal reputation and credibility. High end sales may not occur directly via online channels, but positioning of online and giving consumers choice and wider range of services can contribute to sales overall.

APPENDIX

SURVEY PARTNERS

Art and Only

Artfinder

Artfuly

Artnet

Artstar

Artsy

Artuner

Artviatic

AuctionAftersale

Auction Mobility & Lofty

Auction Network

Auction.fr

Barnebys

BlueThumb

Christie's

Collectionair

Gazelli ArtHouse

Heritage Auctions

Interencheres

Invaluable

ideelart

iTondo

Lavacow

LotPrive

MyArtBroker

Ocula

Phillips

QArt

Riot ArtGallery

Rise Art

RubyLane

s[edition]

SaatchiArt

SaffronArt

Sotheby's

UGallery

Value My Stuff

Wydr

DATA OVERVIEW

We have profiled over 100 companies of which 39 completed an online survey or one-to-one interview for the purpose of providing content for the report.

We reached out to all the companies covered in the Hiscox Online Art Trade Report 2017. Additionally, others were included, who fit the profile of providing an online platform (as described in the sales branch infographic). Twenty five companies included as survey partners in our list were also profiled in the Hiscox report. Another 12 are new.

Our analysis provides information on the supply side of the market, complimentary to the buyer data and analysis provided in the Hiscox Online Trade Reports. We also sent a survey to over 8000 dealers and gallerists and had a response of 673 dealers; a response rate of over 8%. Invaluable provided a sample of data from 3,349 auction houses who sell a fraction of their sales online, and are powered by them.



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